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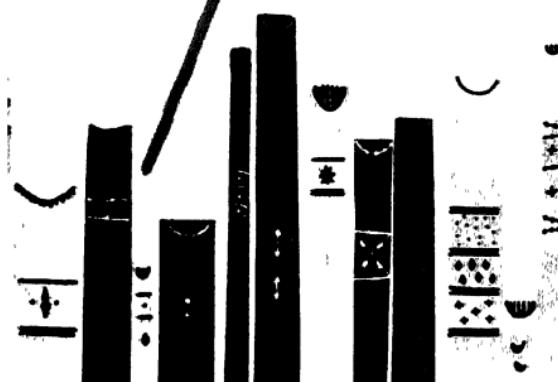
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“Great Writers.”

EDITED BY

PROFESSOR ERIC S. ROBERTSON, M.A

LIFE OF VICTOR HUGO.

LIFE
OF
VICTOR HUGO

BY
FRANK T. MARZIALS

LONDO
WALTER SCOTT
24 WARWICK LANE, PATERNOSTER ROW
1888

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NOTE.

THE reader would thank me very little for enumerating here all the books and periodicals consulted during the composition of this short biography. My sheaf, comparatively small as it is, has been gleaned from many fields. Two debts, however, I feel in honour bound to acknowledge, one to Madame Hugo's "Victor Hugo raconté par un Témoin de sa vie," and the other to M. Biré's "Victor Hugo avant 1830."

F. T. M.

LIFE OF VICTOR HUGO.

CHAPTER I.

THERE are some men round whose name and fame and work it would almost seem as if human opinion were destined to rage in never-ending strife. Such a man was Victor Hugo. For upwards of sixty years he remained conspicuous among his contemporaries, an object of passionate admiration, and almost equally passionate dislike. During the earlier portion of that period he stood in the forefront of the great battle between the Romantic and Classical schools in French literature. To his followers he was the man of men, the “impeccable master,” the genius of his age, a kind of sun-god dispelling the drear darkness of poetic routine and ancient night. To his adversaries he was a mere savage, a monster, rudely violating his mother tongue, and setting all sane traditions at defiance. Then, when that battle had in a measure fought itself out, came even fiercer warfare in the world of politics. The Revolution of 1848, fitful, sudden, erratic, drove Louis Philippe from the throne of France. A short-lived Republic followed. But in the Republic was soon visible what some hailed as the dawn, and others cursed as the coming night of

Imperialism. Among those who cursed was Victor Hugo, and his talents in that kind were simply magnificent. What winged words, tipped with venom and flame, did he not discharge at Napoleon III.! And how cordially the Imperialists hated him in return ! But even when the Empire had been swept into the dust-heap of human failures— even then, amid the shouts that hailed the poet as the laureate of French democracy, discordant voices might still be heard. Not yet had unanimity been reached. A new literary school arose professing to be neither classical nor romantic, but “naturalist.” Facts, realism, science, such were, and are, the watchwords of M. Zola and his Comus-rout. Weighed in a balance that takes no account of what is ideal, or beautiful, or sublime, no wonder if Victor Hugo’s work is found lighter than vanity itself. He is arraigned for artificiality, for preferring an epic grandeur to the actual proportions of life, and ridiculed for his mediæval “bric-à-brac,” his empty, sonorous rhetoric. “He never followed after truth,” such is M. Zola’s conclusion ; “he was never the man of his age.” And if this be the verdict of the last coarse school in French literature, how does his reputation stand among daintier critics of an approved Atticism, like M. Scherer and Mr. Matthew Arnold? The latter praises Sainte-Beuve for having early “seized the weak side of Victor Hugo’s poetry,” its “emptiness,” “theatricality,” “violence,” and quotes, as “a description never to be forgotten of Victor Hugo as a poet,” the statement of Sainte-Beuve that he was a “Frank, energetic and subtle, who had mastered

the Latin literature of the decadence." After this, if one has been watching the battle-field at all impartially, one is glad to see a bold, or it may be even a rash, diversion in the poet's favour; one is glad to see Mr. Swinburne swinging down upon the enemy in full charge, and to hear him shouting his mighty war-cry in praise of the "great master whose name is the crowning glory of the nineteenth century," of the "greatest writer whom the world has seen since Shakespeare," "the greatest Frenchman of all time"!

Thus for upwards of sixty years has the strife of tongues raged round Victor Hugo. And it is a strife in which whosoever speaks of him at all is almost constrained to take a part. The man was pre-eminently a fighter. How is it possible to avoid controversy in discussing his life and works? So with every desire, as far as in me lies, to live peaceably with all men, I cannot but feel that before faring very far forward, I too shall be drawn into the conflict; and, standing as it were upon the battle's brink, I almost hesitate.

"This century of ours was two years old, the Sparta of the Republic was giving place to the Rome of the Empire, and Bonaparte the First Consul developing into Napoleon the Emperor, . . . when, at Besançon, . . . there came into the world a child of mingled Breton and Lorraine blood, who was colourless, sightless, voiceless, and so poor a weakling that all despaired of him except his mother. . . . That child, whose name Life appeared to be erasing from its book, and whose short day of existence seemed destined to pass into night with never a morrow—

that child am I." Thus, in lines which most Frenchmen know pretty well by heart, has Victor Hugo related the incidents of his birth. To put the matter more prosaically, he was born at Besançon, in the extreme east of France, on February 26, 1802.

His father, Joseph Léopold Sigisbert Hugo, was an officer in the French army, and aged some twenty-nine years at the time of Victor's birth. Under what circumstances he had become a soldier is not quite clear. His own memoirs—for he too wielded the pen, and has left memoirs—are somewhat reticent on the point. The family record suggests that he first embraced the career of arms in 1788 as a "cadet." My own impression is that he entered the ranks quite humbly as one of the numerous volunteers who, at the approach of the Revolution, came forward to do its work and defend the country. Be that as it may, in 1793-4 we find him already a captain—for among good republicans promotion was rapid in those days—and actively engaged in the war against the royalists of La Vendée. He has changed his name to "Brutus," which is a sign of the times, and helps to memorialise the Convention in denunciation of the Girondists, and in praise of "the sublime Constitution" of 1793; and he "swears," in common with his co-signatories, to "shed the very last drop of his blood to crush all tyrants, fanatics, royalists, and federalists." He is also somewhat busily engaged as secretary to the military commissions which are condemning the unhappy royalists to death, or purveying victims for the infamous Carrier's revolutionary tribunal at Nantes. Dirty work at best, and there seems no

reason to doubt that he hates it, and does what in him lies—as he claims for himself, and Madame Hugo claims for him—to mitigate the horrors of that fratricidal war. Thence, the rising in La Vendée being crushed, he is transferred to Paris, and employed for some two years in semi-military semi-legal work at the War Office; and thence again passes to the Army of the Rhine, under Moreau, and is attached to the personal staff of that great general, who for a time almost seems to be the pre-destined rival of the rising young Napoleon. Such is Victor Hugo's father, who, after a creditable, and one may almost say distinguished military career, is commanding his battalion at Besançon in 1802.

As to the boy's mother, she had had, if we may trust a passage in the preface to "Les Feuilles d'Automne," a troubled childhood; had been a *brigande*, as the insurgent royalists were called, "like Madame de Bonchamp and Madame de Larochejaquelein," and had been compelled to "fly," she, "a poor girl of fifteen," across the ensanguined fields of "the Bocage." But here, I think, some little allowance must be made for poetic licence. M. Trébuchet, the father of this young lady, was a shipowner at Nantes; and we are told, on the excellent authority of his granddaughter,¹ that he was "one of those honest citizens who never travel beyond the confines of their own city, and of their once settled

¹ The reference here, and throughout, when I quote from Madame Hugo, is to her "Victor Hugo raconté par un témoin de sa vie," which was clearly written under Victor Hugo's own eye, and may almost be treated as his autobiography. It is re-published in the complete edition of his works.

opinion." Clearly not the man to go careering about the Bocage with his three motherless daughters, or to allow one of them to take what the French call "the key of the fields" on her own account. Moreover, I think we may regard it as pretty certain that Madame Hugo, with her skill in selecting the picturesque points in the family history, would not have neglected so striking an episode, unless it had lain beyond the confines of fact, and in the cloudland of legend or imagination. Still, though Mademoiselle Trébuchet may never have borne arms in her own person, she was a royalist, and the daughter of a royalist; and there must have been many obstacles to the wooing of the handsome young republican officer, who, in his frequent visits to Nantes, hovered about the dovecote of the worthy ship-owner. "Love," however, here again, was "lord of all," as in the far-off days when the English lady "would marry the Scottish knight." Sigisbert Hugo, for the now obsolete "Brutus" had been dropped, held to his suit. Sophie Trébuchet was nothing loath. Her father suffered himself to be persuaded, consented even to leave Nantes for a time, and take his daughter to Paris, where the bridegroom elect was, for the nonce, driving the clerkly quill at the War Office. So all went well. The marriage took place in 1796. A first-born son, Abel, came into the world, at Paris, on the 15th November, 1798; a second, Eugène, was born at Nancy on the 16th of September, 1800; and Victor followed on the 26th of February, 1802.

Having thus spoken of the poet's father and mother, perhaps a word may fittingly be said of his ancestry. Whereupon I enter at once into the strife of tongues.

According to Madame Hugo, to Victor Hugo himself, to M. Barbou, Victor Hugo's enthusiastic biographer, the Hugos were a noble family, "illustrious both in literature and in arms," and Madame Hugo half apologizes for not carrying their genealogy further back than 1532, saying that all earlier records had perished at the pillage of Nancy, in 1670. Now that there was a noble family of Hugos is indisputable. Unfortunately there is nothing to show that our Hugos were in any way connected with them. M. Biré, who has gone into this matter with great care and minuteness, establishes the point pretty conclusively. Victor's father was a soldier who had entered the army as a volunteer at the outset of the Revolution. He speaks of his own people as *honnêtes gens*, which may be regarded as the equivalent of worthy and respectable. As a matter of fact they belonged to the upper artisan class. The poet's grandfather was a carpenter. Three of his aunts were sempstresses; one was married to a baker; another to a hair-dresser. It is scarcely possible, as Madame Hugo asserts, that five of his uncles should have fallen in battle at Weissenbourg, for there were but five altogether, and three lived till long after the date of that engagement. Nor, I repeat, is there anything whatever to connect all these worthy people with the knights and esquires, privy counsellors, and bishops of the — I was going to say other branch, but it should rather be other tree of the Hugos. There is evidence, on the contrary, to show that no connection existed.

And here, perhaps, the judicious reader may be tempted to ask, "What can all this possibly matter? Grant that the poet's origin was more humble than has

hitherto been supposed, and that, instead of coming from a class which even its admirers would admit to have become somewhat effete at the end of the eighteenth century, he sprang from a race of sturdy and energetic artisans—grant all this, and how can it affect him injuriously? In default of ancestral honour may not a man like Victor Hugo claim the greater honour of being himself an ancestor, and rooting, as it were, a mighty and perdurable name?" True, most true. But not quite the point here at issue. If the poet had said nothing about his family, no one else would have said anything about it either. But he did say something, and that something was neither accurate in statement nor suggestion; and, unfortunately, inaccuracies of a similar kind exist throughout his works. Here is the crux. Here is the question which the biographer cannot blink—a question similar in kind to that which has to be faced by the admirers of Chateaubriand and Shelley and Goethe, and various other great men. Did Victor Hugo knowingly palter with fact? Did he advisedly, and in full knowledge of what he was doing, present it in a light that was not the light of truth? Genius is quite compatible with charlatanism, else were we led to the conclusion, too evidently absurd, that the great Napoleon was no genius. Are we compelled by the verities of criticism to believe that there was a baser alloy of quackery mingled with the fine gold of the genius of Victor Hugo? Such is the problem; and before I have done I shall have to endeavour to find some solution to it. But that must be further on in our story, and when we have collected additional materials

on which to found a sane and equitable judgment. Meanwhile it will be fitting to return to the birth-place and birth-time of the little weakling child, whose future career was to suggest these delicate ethical questions.

We left him at Besançon on the 26th of February, 1802, the doctor declaring that he could not live, the mother fully determined that he *should* live,—and prevailing. Not thus, in what Hood, the unrivalled punster, called “Babbicombe Bay” and “Port Natal,” was the argosy that carried the child’s superb fortunes to be wrecked—not thus, prematurely, was to close a career destined to be remarkable for its magnificent vitality. “Victor Marie,” so was the boy christened ; and the name proved of happy augury. In his first fight he came off victor over death. Within six weeks he had so far gained strength as to be able to bear removal to Marseilles ; and thence, though still very delicate, he was taken about to Corsica and Elba, from station to station, in the wake of a wandering military father.

“Blood and iron” ! Prince Bismarck himself might have been satisfied if he had lived during the first fifteen years of this century ; for the times were certainly of iron, and blood ran without stint. As we think of the great battle-field that Europe then was, and listen to the echoes that history brings to us, we almost seem to hear again the roar of the old cannon, and the tramp of armed men, and the wail of those who mourn for their dead. And if such be the impression which Napoleon’s campaigns still produce on us, who live in these later days, and have heard the rumour of other armies marching and counter-marching, and the crash of other empires in

their fall—what must have been the impression made on an ardent, imaginative boy, himself partly nurtured in the camp, and whose father was daily staking his life in the great war game? The poet has told us, and with some pomp and circumstance, in one of his earlier odes, how his cradle had oft been rested on a drum, and water from the brook brought to his childish lips in a soldier's helmet, and how the glorious tatters of some worn-out flag had been wrapped round him in his sleep. Without accepting this quite literally, we may yet, I think, easily picture to ourselves how the boy was influenced by the varied experiences, journeyings, and anxieties of his earlier years. Surely the fierce war-goddess, then crying havoc over the ravaged fields of Europe, was, in her strange wild way, no unfit “nurse for a poetic child.”

Memory plays strange pranks with us all, and often hoards with a miser-like tenacity some worthless odd and end, while she squanders real treasure like a prodigal. Victor's first recollection comes strangely, and yet with a sort of “touch of nature,” among the stirring incidents of his boyhood. His father had gone off, in 1805, to join the army in Italy under Masséna. His mother had brought her little brood to Paris. And here he remembered—it was the first dawn-streak on the horizon of his mind—how he used to go to school with his brother, and how, being a very tiny and very frail scholar, he would mostly be taken, on arrival at school in the early morning, to the bedroom of Mademoiselle Rose, the schoolmaster's daughter, and how, perched up on her bed, he would watch her at her toilet. But soon matters of graver import began to find a place in his memory.

His father, after doing good service under Masséna, had passed into the army of Joseph Bonaparte, then King of Naples ; had tracked and captured Fra Diavolo, the famous brigand chief, tracked him almost literally like a hare ; and had been rewarded with the command of a regiment and the governorship of the province of Avellino. Peace, or something like peace, reigned in Southern Italy ; and Madame Hugo set off, at the end of October, 1807, to rejoin her husband. So little Victor journeyed, in the dear, tedious, lumbering old *diligences* of those days, across a rain-soddened France, and then—in a sledge for the nonce—through the snows of the Mont Cenis Pass, and then, in *diligences* again, by Parma, and Florence, and Rome the Imperial City, and Naples with her peerless bay, and so on to Avellino. Alexandre Dumas, the great Alexandre, most charming of narrators, has devoted several chapters of those light bright memoirs of his to the history of Victor Hugo's childhood and youth ; and he bears witness, from conversations held forty years afterwards, to the singular faithfulness of the impressions left on the child's mind by that Italian journey. On one point we scarcely need his assurances or those of Madame Hugo. Both tell us how much the little traveller was affected by the dismal spectacle of the bodies of executed brigands, hanging from the trees at pretty frequent intervals along the road. All through life every form of capital punishment—gibbet or guillotine—retained for him a kind of morbid fascination. There is, in his house at Guernsey, a picture grisly and horrible, executed by himself, showing a poor human body, the body of John Brown, the negro liberationist, “hanged

by the neck" till it seems reduced by time and the weather's indignities to mere shreds and tatters of what once was man. Among the most powerful passages in "*L'Homme qui rit*"—indeed I think the most powerful—is the description of the corpse hanging in chains on the top of Portland Bill, and terrifying poor little Gwynplaine by the execution of a hideous dance to the wintry pipings of the wind.

At Avellino life went very pleasantly. As governor of the province, Col. Hugo occupied a marble palace, all fissured, it is true, by a recent earthquake, but not the less enchanting on that account to the eyes and fancy of childhood. Then there was a deep wooded ravine in close proximity, and there were nuts to heart's desire, and—charm of charms to the natural boy!—no lessons, nothing to dim the cloudless blue of perfect idleness. So the three little Hugos enjoyed halcyon days with their kind father in the sunny South, amid the mountains and gorges of Avellino; but days all too short, and flitting almost with the rapidity of the halcyon's wing. Kings were "on promotion" at that time. Joseph Bonaparte, after reigning over Naples till June, 1808, was placed by his imperious no less than imperial brother upon the Spanish throne, which had just been iniquitously wrested from the reigning Bourbons. Col. Hugo stood high in Joseph's favour. When the latter moved to Madrid, Col. Hugo received an honourable and pressing invitation to follow. Such a proposal was by no means to be refused. As a known adherent of the disgraced Moreau, or for other reasons which have been variously explained, the Colonel had little to expect

from Napoleon, and it was clearly his policy to remain attached to the Bonaparte, who appreciated his services. But Spain, with her national pride excited to blood-heat, was as yet no place for the education of three French boys, or the residence of a French lady. Again did it become necessary for father and children to part. So sorrow reigned on either side, and the lads turned their faces towards Paris very sadly.

Madame Hugo, the elder, if we may credit her daughter-in-law's testimony, entertained no great admiration for the beauties of nature, and had watched the Alps and the Apennines with some indifference. But she liked a garden ; and attached to the house which she took shortly after her return to Paris, was a garden that was more than a garden, that was a park, a wood, a piece of the country dropped into the midst of the great city, a place of enchantment, a very Broceliande, where magicians might weave their spells, and monsters lurk in secret places, and knights and ladies wander at will, and everything unforeseen and unexpected happen quite naturally. In this place of delight, which had belonged in pre-revolution days to the convent of the Feuillantines, the three boys were as happy as the exigencies of education would allow. Abel, the eldest, was now old enough to go as a boarder to the Lycée, or public school ; and Eugène and Victor were sent to a somewhat humble day-school not far from their home, and kept by a certain Larivière,—a worthy pedagogue, formerly a priest, whom the Reign of Terror had unfrocked and frightened into marriage. But in play-time, and especially on Sundays, when Abel had his weekly holiday, what pleasures did

the garden not offer ! Thither too would come not unfrequently, taking her gentler part in the boys' rougher games, the little lady whom the poet afterwards married. No wonder that the sunshine of the old place lived so bright in his memory.

And besides the tenants with which the imagination of these bright children peopled the dainty wilderness and the ruined ecclesiastical buildings of the Feuillantes, there was a tenant in flesh and blood to whom attached an interest quite as romantic. This was General Lahorie, Victor's godfather. For General Lahorie, an old friend and companion in arms of General Hugo, lay here in hiding. He was one of the officers implicated in Moreau's conspiracy against Napoleon, and had been condemned to death,¹ as we are told—but I think that extreme penalty must have been commuted—and then tracked from one place of refuge to another, till at last Madame Hugo had generously afforded him sanctuary in a ruined chapel in her garden. Here he appears to have remained some eighteen months, and was to the boys the pleasantest of companions. He would tell them numberless stories, “true stories,” doubtless, of adventure and peril “i’ the imminent deadly breach,” stories calculated to fire their young blood, and make them long for the time when they too should be old enough to handle sword or musket. He would also go over their lessons in the evening, and read Tacitus with little Victor, now a progressing and very advanced young scholar of nine or ten. Ought we

¹ Condemned in his absence, as is possible according to French law.

also to believe that he first lit in that young gentleman's mind the bright pure flame of democratic republicanism —a flame destined to smoulder there for a time, and afterwards to burst forth as a beacon to the nations? We ought to believe this, or something like it, for Victor Hugo tells us so, and represents the general, in a very striking passage, as saying "fit things" on liberty, and on Napoleon as liberticide, while overhead the illuminations of some imperial fête were bravely flaring. But, alas, that critics should be so troublesome! Why can they not, according to Lord Melbourne's recommendation, "let it alone"? M. Biré, I fear, makes it very difficult for us to give full credence to this pretty story.

Whether or not General Lahorie held the antithetical conversation reported by his godson, certain it is that the days went pleasantly by in the house and garden of the Feuillantines. And beating as it were round the happy shores of childhood, adding a kind of zest to the brightness and mirth, were the ceaseless wild surges of battle. Wars and rumours of wars, these sent their voices continually into that joyous home. Now the boys would be listening to such bulletins of the imperial campaigns as the Government vouchsafed to impart to its lieges—bulletins that spoke of successes very often, and of reverses never at all, and were not altogether quite ingenuous perhaps. Then would come the visit of a colonel uncle, all resplendent in gold lace, and producing on his little nephews, so Victor tells us, the effect of Michael the archangel, as seen in glory. He too might have tales to tell of even newer combats than those described by General Lahorie. There would also be

the waggons containing the “treasure.” Then the antiquated, huge, travelling carriage of Madame Hugo, who, as the wife of a governor, had successfully contested precedence with a duchess of Spain. Then an interminable line—more than two miles long, we are told—of vehicles of every form and description—all green and gold for the most part, those being the Imperial colours—and creaking, groaning, jingling on their way, with much cracking of whips and swearing in every tongue, and an intolerable cloud of dust. On either side of the line were more soldiers, and, forming the rear-guard, more soldiers still, and a couple of cannon. Upwards of two thousand men: such was the force required to convoy money across Spain in the days when Joseph was king. Nor does it appear that there was a man too many. Scarcely a month previously another convoy had been robbed and massacred at Salinas.

No such evil chance befel the cavalcade of which the Hugos formed part. Does not the boat that conveys the fortunes of Cæsar at all times enjoy special immunities? Yet were adventures, and even perils, not altogether wanting. Near Salinas again there was an attack on the part of the Guerillas, but badly planned, and resulting only in some smart sharp-shooting—sharp-shooting, however, carried on at sufficiently close quarters to allow of a brace of bullets being lodged in the family coach. A little farther on the road, that same coach as nearly as possible fell over into a precipice, and was only saved, with its occupants, by the prompt arms and hands of a company of Dutch soldiers, whose good-will Madame Hugo had secured by benevolences of food. Further on

an axle-tree broke, and the little party were almost left behind to the tender mercies of the Guerillas. Everywhere too there was evidence of the hatred of the inhabitants. The houses in which Madame Hugo and her children were quartered seemed deserted, and offered the most sinister hospitality to the travellers. All was done to make them feel that they were the guests of fear and harsh necessity.

Over the months of Victor's sojourn in Spain it is not my purpose to linger. He reached Madrid in June, 1811, and was shortly after placed, with his brother Eugène, in a great dreary aristocratic school kept by the monks. Here the lads were far from happy among schoolfellows of a hostile nation, and relatively much less advanced in learning. Winged words hurtled in the air pretty constantly, and blows followed, and, on one occasion at least, the use of Spanish steel. Often must the two younger brothers have cast envious glances—such glances as the caterpillar may be supposed to cast at the butterfly—when looking at Abel Hugo, now promoted to the dignity of page in the royal household, and gaily glittering in his uniform of blue, silver, and gold. But deliverance from this Spanish dungeon was at hand. The plot had begun to thicken in the Peninsula. The tide of conquest was turning. In January, 1812, Ciudad Rodrigo fell into Wellington's hands. Three months later he took the commanding position of Badajoz. In July came the victory of Salamanca. Events either accomplished or looming rendered Spain a quite unfit sojourn for French women and children at the beginning of that year. Their presence could scarcely act, even in

appearance, as a kind of flying buttress to the tottering French monarchy. Ere March had blustered itself into April, Madame Hugo and her two younger boys were on their way back to the garden of the Feuillantines. Abel remained behind to take his boy-soldier's part in the conclusion of a war disastrous to the French arms.

The disproportion between the ages of the boys and their advancement in learning rendered it difficult to place Eugène and Victor in a public school. M. Larivière was accordingly engaged to teach them their humanities. And as regards this worthy pedagogue, as indeed with regard to the whole tendency of the young Hugos' early education, there are several observations which ought to be made, and may fittingly here find a place. Victor Hugo's first works, as we shall presently see, were the outcome of very strong monarchical and legitimist convictions, and animated throughout by the spirit of Roman Catholic Christianity. His later works, the works of the last thirty years of his life, were, on the contrary, fiercely democratic and anti-clerical. Whereas he had in his youth execrated the Revolution, and blessed kings and priests, he came afterwards to speak of the Revolution in terms of rapture, and to regard kings and priests as the twin pests that afflict mankind. Of this change in his convictions he was very proud. He reverts to the subject again, and yet again, in verse and prose. If Murat, he asks, is to be praised and honoured because, "having been born a stable-boy, he became a king," should not that man be honoured more who has achieved the rare and difficult ascent from error to truth, and, having been "born an aristocrat and a royalist, has become a

whom we shall meet again in the course of our narrative. The new year, of which this 31st of December was the eve, proved to be an eventful one in the annals of the Hugo family, no less than in the annals of Europe. On the 9th of January, 1814, General Hugo, who had perforce left Spain after the defeat of the French arms at Vittoria in the preceding June, received orders to assume command at Thionville, on the Eastern frontier, and to defend the place against the approaching allies. In April Napoleon abdicated, and Louis XVIII. re-entered Paris, to the gratification of all good royalists,—Madame Hugo's enthusiasm flaring so high that it does not seem even to have been damped by the quartering upon her of a Prussian colonel and fifty Prussian soldiers. Shortly afterwards she went to Thionville, to “settle some important family matters” with her husband, as her daughter-in-law tells us. Speaking more particularly, she went, as would appear from M. Barbou's life of the poet, to arrange the terms of a separation by mutual consent. How had this come about? Was political incompatibility at the bottom of it, as M. Barbou would have us believe? I trow not. General Hugo's principles were scarcely of that inflexible character; and there are rumours of other reasons. Anyhow, General Hugo seems at about this time to have determined that his two younger sons should be sent to school,¹ and educated in

¹ According to M. Barbou, and others, it was after the second restoration of the Bourbons, in 1815, that General Hugo determined to send the boys to school. But this does not agree with Madame Hugo's narrative, and it is difficult to reconcile some of the incidents which she relates with the view that the boys were not at school before the second entry of the allies into Paris. The question, however, is of no particular importance.

view of the *École Polytechnique*, which is the recognized avenue in France to various kinds of government employment, and in particular to admission into the corps of military engineers.

To school the two boys went accordingly, to a certain *Pension Cordier*¹ et Decotte, where they speedily pushed themselves into a position of some prominence. The future king of men—for such Victor Hugo unquestionably became—began by being a king of boys. He and his brother led rival parties among their school companions, and exercised most despotic rule. That some of this ascendancy was attributable to the fact that they occupied the aristocratic position of parlour-boarders, is possible. Native force of character and intellect must, however, have had something to do with it besides. For the rest, if we try to picture to ourselves what Victor was as a schoolboy, we shall, I think, have the image of a fine manly intelligent lad, fast developing into a fine manly young fellow. Though he was already rhyming apace, and to excellent effect, as we shall presently see, yet had he none of the poetic sensitiveness that shrinks and shivers at the rude contact of school life. He was no Shelley to make himself prematurely miserable over the want of harmony in his little world. Rather did he drink delight of battle with his peers, as occasion presented. He seems, too, to have studied zealously—reserving a large place in his thoughts, no doubt, for Chateaubriand, who was the idol of young France at that time—but still applying himself honestly and well to the

¹ Cordier, by the by, was another unfrocked priest, an intense admirer of Rousseau.

school curriculum, and following assiduously the courses of lectures at the Collége Louis le Grand. For mathematics especially he appears to have shown great aptitude ; and, in the general annual competition of all French scholars for the University prizes of 1818, he obtained the fifth place for physics.

This was the last year of his school life. In August, 1818, being then sixteen years of age, he left the Pension Cordier et Decotte, fully determined for his own part that he would not try to obtain admission to the École Polytechnique, or be a soldier. He had, in fact, made up his mind to pursue a quite different career.

CHAPTER II.

IN the lives of the great majority of men there is a clearly marked boundary line, a kind of natural frontier as it were, between the years of preparation and the years of performance. At a certain point education ends, and ends definitely. The man has gone through his school or college course, and then, his training being over and done with, he addresses himself to maturer tasks and duties. But in Victor Hugo's life there is no such break. Though, with the arbitrariness of the biographer, I have used the conclusion of his school course to mark the end of a chapter, yet in truth the severance of his connection with the Pension Cordier was by no means an epoch-making event in his career. Long before he left that establishment he had commenced what was to be his life work. Already had he earned a reputation as a poet, and shown his facility and aptitude as a writer. Deliverance from lessons and lectures merely meant, in his case, greater freedom to pursue the avocations which he was already pursuing. In order, therefore, to take up his literary life from its commencement, it is necessary to go some little way back.

Verse, verse, and yet again verse—such had been the

boy's delight almost from the time when he first went to school. Genius was his unquestionably. Boon nature had given him that priceless gift without stint or measure. And the circumstances of his childhood had been such as to develop and foster the gift, and favour its early manifestation. We have seen what a panorama of moving sights had already passed before his eyes—Italy in her beauty, Spain in her picturesqueness, war in its grandeur and pomp, its misery and haggard horror. Young as he was, he had seen many men and cities. He must have known, boyishly no doubt, but still very really, the poignant emotions of France as news came to her, however fitfully, of defeat in Spain, of the melting away of the Grand Army into the snows of Russia, and of the culminating disaster of Waterloo. All this had found a place in his mind, had vivified thought and feeling, and given him something whereof to sing. So he piped his boyish songs without cessation. “During the three years which he spent at the Pension Decotte,” says Madame Hugo, “he wrote verses of every possible kind: odes, satires, epistles, poems, tragedies, elegies, idylls, imitations of Ossian, translations of Virgil, of Lucan, of Ausonius, of Martial; songs, fables, tales, epigrams, madrigals, logographs, acrostics, charades, rebuses, impromptus. He even wrote a comic opera.” It was Théophile Gautier, if I remember right, who declared that a poet ought to exercise his prentice hand on at least fifty thousand lines of verse before writing anything for publication. Victor Hugo must have fulfilled this hard saying almost to the letter.

And soon his verse was to receive public recognition.

The French Academy, that august body, had proposed as the subject for the prize of French poetry, to be awarded in 1817, "The happiness that study can procure in every situation of life." Scarcely a very fit theme on which to poetise, as we should now consider. What composer was it, Grétry or Méhul, who gave it as his opinion that the words of a song or opera mattered not at all, and that there would be no difficulty in setting to music *The Gazette of Holland*? And similarly it would almost seem as if the Academicians of the commencement of this century held that any proposition, however prosaic, could be "set" to verse. "Happiness procured by study in every situation of life"—what dreary didacticism do the words suggest! Nevertheless, young Victor applied himself to the task bravely. With the readiness of pen which he already possessed, to write the requisite number of lines, even on such an untoward subject, was comparatively easy. But how should he get the poem, when written, to the Academy? Schoolmaster Decotte was his rival as a poet, and not at all likely to help him. Fortunately a friendly usher, in whom he had confided, turned the difficulty by a clever ruse—took the boys for a walk in the direction of the Institute, set them looking at the fountains before that abode of learning, and, while they were thus employed, scampered off with Victor, and deposited the precious manuscript in the secretary's office. With what anxiety the result was expected need not here be told. Is there one of us who has not gone through similar experiences? The Academy delivered judgment on the 25th of August, 1817, divided the prize between a

M. Lebrun and Saintine,—afterwards well known as the writer of “Picciola,” the story of the prison flower,—and then gave an honourable mention, ninth in order, to Victor Hugo’s lines. The boy had taken occasion in the poem to refer to his age, and this, contrary to the accepted tradition, seems to have stood him in good stead with the venerable Academicians.

An honourable mention from the Academy, even with no higher place than the ninth, was a title to distinction for a lad of fifteen. Victor, who a year before, on the 10th of July, 1816, had written in one of his copy books, “I will be Chateaubriand or nothing,” must have felt that he had placed his foot on the first rung of the ladder of fame. Complimentary verse flowed in upon him. His erewhile rival, M. Decotte, abandoned the poetical field, beaten. The boy became a boy of mark in his little world, and was not even quite unknown, as a sort of poetic prodigy, in the great world outside the school precincts.¹ So there was much more versifying as may be supposed, and a considerable amount of prose writing too.

Abel, the eldest of the three brothers, had abandoned the military profession after the fall of Joseph Bonaparte, and was apparently devoting himself to business of some sort, and living the pleasant life of young bachelorhood in Paris. Among his numerous friends were several who had a turn for letters. He himself possessed strong literary tastes, and was soon to devote himself entirely to

¹ M. Barbou seems to assign to this date the famous epithet of “sublime child,” which Chateaubriand, or somebody else, did, or did not, apply to Victor Hugo. Madame Hugo assigns to it a later date. The whole matter, much discussed as it has been, seems scarcely worth discussion.

literature, and become a voluminous writer and compiler. With all these author-aspirants Eugène and Victor were on the best of terms. As schoolboys they must have been under comparative restraint ; but still they were able to join with their elders in periodical cheap dinners, at which the readings and recitations, though doubtless immature, were doubtless also better than the fare. So no wonder if the École Polytechnique, and the military engineering beyond it, receded gradually into the background. To besiege and carry Parnassus, if I may use a well-worn image which would have occurred quite naturally to any writer of the time—to besiege and carry that high embattled hill of Poesy, soon seemed to young Victor the only strategic operation worth pursuing.

This was not a view calculated to commend itself to a military father. General Hugo probably thought that literature and loafing were synonymous terms ; does not seem to have been mollified by the fact that Victor had inscribed his name as a law student ; and, in fine, adopted the particularly stern form of parental argument which consists in cutting off the supplies. Accordingly, when the two boys left school in the August of 1818, they went to live with their mother, and, as would appear, at her charges. *She* had no objection to literature as a profession, and possibly knew of no particular reason why her estranged husband should enjoy the luxury of having his own way. Perhaps, with the prescience of love and motherhood, she even foresaw that, in the case of one of her sons at least, letters would prove to be the path of glory.

On the 3rd of May, 1818, Eugène had obtained a

marigold as a prize for an ode sent to the competition of the “Floral Games” of Toulouse. Victor, not to be behindhand, sent three odes to the competition of 1819. For one of these he obtained an honourable mention only ; but the other two were more successful, and won respectively a golden lily and a golden amaranth. Prize poems are but questionable products of human industry at the best. These two, however, certainly possessed exceptional merit, and, as the work of a boy of seventeen, are very remarkable. One was on the Virgins of Verdun, who, preferring death to dishonour, had been infamously put to death, by the revolutionary tribunal, for giving money and help to some emigrant nobles ; the other was on the re-erection of the statue of Henry IV., overthrown during the Revolution, and now, in these happier Restoration days, replaced on its pedestal with a burst of popular enthusiasm. Both poems were republished three years afterwards, in June, 1822, in the volume of “Odes,” and form part of the collected works. Nor need I say more of them here. Neither must I linger, as I am tempted to do, over the performances of the next year or so, the further competitions at Toulouse and the Academy, the poems, political or satirical, which the boy published or wrote. But, hurrying as I am, I cannot forbear to stop one moment to catch a glimpse of young Victor through the eyes of an older poet, Soumet, who, coming from Toulouse at the beginning of 1820, thus described him to a friend : “This child has a very remarkable head, really a study for Lavater. I asked him what he intended to be, and if he purposed devoting himself entirely to literature. He answered that he hoped

one day to become a peer of France, . . . and he will succeed."

So we catch sight of him in the first dawn-flush of his fame and young ambition, a noticeable lad who means ere his day of life has worn to evening to win a victor's palm. Meanwhile he and his brother Abel have started a paper. It is to be published twice a month, and the first number has appeared in December, 1819. The title is the *Conservateur Littéraire*, or *Literary Conservative*—a title that rather raises a smile as one thinks how very soon the younger of the two editors is to become the most ardent of innovators in matters literary, and how ultimately he will become the fiercest of Radicals in matters political. As to the causes that have led to the establishment of the periodical—these are not far to seek. Madame Hugo and her sons were anything but rich. Some effort at remunerative work had evidently to be made. According to a friendly article in the political *Conservateur*, Chateaubriand's paper, the literary *Conservateur* was started by the young Hugos with the pious object of repaying to their mother the debt of gratitude which they owed for their education. They wished to add to the graces of her life. "Happy youths," said the article, "to have had a mother who has appreciated the value of education! Happy mother, to see her efforts on their behalf so crowned!"

Into the work of writing for the *Conservateur Littéraire*, Victor entered with characteristic industry. The duties of editor he appears to have shared with his brother Abel; and there were several other writers, of whom, so far as I know the names, one only, Alfred de Vigny,

can be said to have made a permanent mark in literature. But the most prolific contributor, without any comparison at all, was Victor himself. Poetry, history, politics, the story of Bug Jargal in its earliest form, literary criticism in profusion, art criticism, dramatic criticism, the boy flamed out his thoughts with the lavish prodigality of a young prince. The periodical lasted from December, 1819, to March, 1821, and forms three volumes. Of these he is said to have written at least two.¹ Later, in 1834, when he began to feel the necessity of giving some account of the changes in his opinions, he made a selection from his earlier writings of this period, and published it as a "Journal of the ideas, opinions, and studies of a young Jacobite in 1819."² But this selection, which is made without any direct reference to the *Conservateur*, is fragmentary only. The exhibited specimens give but a faint idea of the wealth of the mine from which they are drawn. This however is to be noted: young as he was, and I shall have to make the same remark presently in speaking of his earlier verse, he had already acquired a singular mastery over his pen. If his style did not yet possess the individuality, the brilliant colour and music which it acquired ten years afterwards,—if, in a word, it was still a classical and not a romantic style,—yet it was a very good style of its kind. As Carlyle in his first essays was to show that the writer of "Sartor Resartus" might, if so minded, have written his mother tongue excellently in the ordinary way; as Turner in his earlier draw-

¹ So Mr. Biré says. The *Conservateur Littéraire* is now a bibliographical rarity, a black swan among books.

² It forms part of the "Littérature et Philosophie Mêlées."

ings was to demonstrate that the most imaginative and splendid of colourists had in him the stuff of a minute and patient draughtsman—so, in these prentice papers, did Victor Hugo prove how well he could have walked in the old paths of literature, and that it was not because these were closed to him that he boldly hewed out for himself paths new and untrod.

But the days of innovation were not yet. The *Conservateur Littéraire* was conservative in reality as well as title. The great poetical event of the year 1819, an event marking a very important date in the history of French poetry, was the publication of the posthumous poems of André Chénier. Victor Hugo, reviewing the volume, speaks, as a matter of course, of the writer's royalism, of his martyrdom on the revolutionary scaffold, and pays a tribute too, it must be admitted, to the power of the verse. But then what reserve in the praise, what almost admissions that Chénier's "style is incorrect and sometimes barbarous," his "ideas vague and incoherent," his "imagination effervescent," his "sentences mutilated," his "familiarity" with the "language" "wanting." And, while treating Chénier thus half-heartedly—Chénier, who was the real herald of the romantic movement in French poetry,—the young reviewer has words of gracious recognition for the Abbé Delille, the almost last withered twig upon the classic tree. He speaks of the "elegance and harmony of Delille's style," and praises his "pretty poem" on the "Departure from Eden,"—praising Delille especially for "having changed into a tender commiseration the savage anger which Adam, in Milton's work, had testified against Eve," and for having proved, "by

this happy inspiration," "how well he knew the delicacies of the French Muse." Victor Hugo praising Delille at the expense of Milton, this is indeed a Saul among the classic prophets. But it is as nothing to his praising Corneille and Racine at the expense of Shakespeare.

"We have never understood," says he, "the distinction which people seek to establish between the classic style and the romantic style. The plays of Shakespeare and Schiller only differ from the plays of Corneille and Racine in that they are more faulty. That is the reason why, in the former, recourse must be had to greater scenic pomp. French tragedy despises such accessories because it goes straight to the heart, and the heart hates whatever disturbs its interest."

We are very far here from the spirit which was soon to animate the young romantic school, and to induce Petrus Borel to declare that if he could have met the deceased Racine in a theatre of to-day, he would have horsewhipped him before the public !

As regards the poetry which Victor wrote at this time, and published in June, 1822, under the title "Odes et Poésies Diverses," the same criticism holds good. It is emphatically classical, not romantic poetry. There are the stock classical apostrophes, to "unhappy Vendée ;" to the "light spectres," which had been in life the virgins of Verdun ; to the dead Duke of Berry, assassinated in 1820 ; to the new-born Duke of Bordeaux ; to the river Jordan, which had supplied water for that young prince's baptism ; to the "peoples" who had wrongly made a hero of "Buonaparte," the "formidable inheritor of the spirit of Nimrod." There is here and there also an "O thou!" which sounds distinctly like an echo from the emphatic

eighteenth century. And a rhetorical periphrasis too often takes the place of an immediate direct word. Nor are those final notes of exclamation wanting which, according to Coleridge's splenetic remark, seemed to be used by French poets as a kind of hieroglyphics to draw attention to their own cleverness. All these objections are fairly chargeable against the odes ; and there is in them besides only too much of that which has so often been the bane of French poetry, eloquence. We English escape that danger with greater ease, for in our mother tongue the distinction between the language of public speech and the language of verse is sharp and clear. Whole classes of words cannot be used indifferently in either. But French is a more homogeneous tongue, and though there is in it a real distinction of a similar kind, that distinction is far less obviously marked. And here, moreover, the young poet's very subjects, and the spirit in which he addressed himself to them, were such as to tempt him into eloquent prose.

“ There are,” said he, in his original preface, “ two intentions in the publication of this work, a political intention, and a literary intention ; but in the author's thought the first of these is a consequence of the latter, for the history of men affords no material for poetry, unless that history be regarded in the light of monarchical ideas and religious faith.”

Here we seem well in the regions of rhetoric.

But if the odes are formed on older models, and have the faults of an obsolete school, they are excellent samples of the achievements of that school. They possess lithe force and fervour, an eloquence most real if misplaced, a power of compelling language into metre without re-

course to the obvious inversions which French verse,—and English verse also for that matter,—tolerated all too long. “*Madre del oro*” was the name given by Sir Walter Raleigh to I know not what wonderful yellow metal, supposed in nature’s alchemy to be the generator of the gold he went forth to seek. “*Madre del oro!*”—if we have not in these first verses of Victor Hugo the fine gold of a renovated French poetry, we have, at least, the matrix from which it would emerge.

CHAPTER III.

THE first collection of the "Odes" was published in June, 1822; and though the book produced much less sensation than had been produced two years before by Lamartine's "Méditations," yet it clearly "numbered good intellects." But that highest pleasure which a first great success can bring was denied to the young poet: his mother had died on the 27th of June, 1821.

Of her a word may fittingly here be said. She was evidently a woman of strong character, trained in habits of independent action by her husband's long absences. Thus she had been led to assume towards her sons, and especially towards the two younger, a position of double parentage. Loving them with a mother's love and entire devotion, she at the same time ruled them with a father's firm hand. Of Victor's capacity she entertained, and with more than abundant cause, a very exalted opinion. "She looked forward," M. Asseline says, "with the greatest confidence to the future of her son, holding that he might, with even greater justice than Fouquet," Louis XIV.'s overweening "*Surintendant*, adopt as his device the words *quo non ascendam?* 'to what may I not rise?'"

That to such a mother Victor should, on his side, have been greatly devoted, was but natural. That her death would leave a terrible blank in his life was clear. It must also have made a considerable difference in his circumstances. The father married again, and under somewhat peculiar conditions, on the 20th of July, 1821, within a month of his first wife's demise. *He* seems to have given his son at this time neither material nor moral support. So the youth of nineteen, left to his own devices, went very sadly on his own way ; lived as he could, “ and thereto soberly,” as Chaucer has it—lived, in fact, as he afterwards represented Marius to have lived in the “ *Misérables*,” on almost nothing ;—worked very hard ; and, being out of sorts and quarrelsome, fought a duel with a soldier, who ran him through the arm. “ Here am I alone,” he wrote to a friend on the 14th of August, “ and I have a whole long life to live through, unless ”

“ Unless ! ”—what does the word point to ? Suicide, or the possibility of some presence that would make life no longer a solitude ? Scarcely the former ; for here Love takes in hand the web of Victor Hugo's story, and weaves it with threads of purest gold and silk of daintiest dye ; and the fabric so woven is, as I think, altogether beautiful.

But, to tell this love-tale aright, I must go a good way back—go back indeed to a time anterior to Victor's birth,—to the days when his father was doing War Office work in Paris.

For among Major Hugo's civilian colleagues at the War Office was a certain Pierre Foucher, a man of culture and ability, with whom the Major entertained very

amicable relations. Both were married at about the same time ; and Major Hugo, acting as best man to his friend, lifted up his glass at the wedding dinner, and gave utterance to this wish, “ May you have a daughter, and I a son, and we will arrange a marriage between them. I drink to their joint health and prosperity.” A prophetic toast truly. Major Hugo did have a son : he had three ; and M. Foucher had a daughter, Adèle, of whom we have already caught a glimpse in the garden of the Feuillantines—a little trotting creature, just made to be tossed in a swing, or laughingly charioted in a wheelbarrow. Later, in 1814, we catch a glimpse of her again, going arm in arm with Victor, for the two families had remained on the friendliest terms, to see some royal procession of the restored Bourbons. Later yet, in the winter of 1819-20, we see a small party of friends, almost a family party, meeting night after night at M. Foucher’s private apartments in the War Office. He is there, of course, and his wife and son—and Miss Adèle too, we may be sure ; and with them are Madame Hugo and her two sons. It is the quietest of quiet parties, for M. Foucher is somewhat of an invalid, and save when he and Madame Hugo take a pinch of snuff together, little is said. But there are other pleasures than those of speech ; and as Victor sits in the half-light watching that dark handsome girl at her needle, he thinks that never did hours pass so happily. Indeed when winter comes again, he shows his pleasure in a manner at once imprudent and obvious. Madame Hugo reads his love glances. M. Foucher observes that “ Miss Adèle ” sees them too—the expression is her own —“ without displeasure.” Parents are so unreasonable !

Victor is penniless. Miss Foucher has nothing. Both are too young to think of marriage. Tears and separation—what other issue is possible?

But not thus was Victor Hugo to be baffled and beaten; not thus was his first love to pass out of his life and heart. Sighs and the languors of passion, day dreams and the enchanted reveries of youthful hope, all to which the poetic temperament turns so naturally for comfort, he thrust resolutely to one side. With the tenacity and strength of will that characterized him through life, he set himself to overcome every obstacle. If industry and strenuous effort could make the marriage possible, Adèle Foucher should be his wife. In simple truth, and with no embellishment of rhetoric or imagination, did he vow to himself, in Lord Tennyson's words,

“To love one maiden only, cleave to her,
And worship her by years of noble deeds
Until he won her.”

Of course there were occasional meetings. After Madame Hugo's death the two lovers seem to have come together for one sad interview. Then there is a little confusion of dates. But in July, 1822, as I gather, the opposition of the Fouchers was finally overcome. They had gone to Dreux, taking their daughter with them. Victor followed, as the sunflower turns towards the sun. M. Foucher says: “While I thought him quietly in Paris, the young poet had followed us on foot to Dreux, where we had gone to spend a few days. We discovered him roaming round the house, and I was compelled to come to some understanding with him.

At our interview he displayed an unalterable resolve." What was to be done in the face of such perseverance? Everything pleaded for the lovers—Adèle's tears and Victor's energy and confidence in the future. "For ourselves," says M. Foucher again, "that to which we attached special importance was the uprightness of his character, and the innocence of his tastes." So they were engaged, and the "moments" doubtless "ran themselves in golden sands" at Dreux, and afterwards in Paris when the lovers returned thither. Prudence, of course, still counselled delay. But the first edition of the "Odes" realized a profit of 700 francs. In September Louis XVIII., most opportunely, gave the poet a pension of 1,000 francs from his privy purse.¹ Then the young couple were to be spared the expense of house-keeping, for they were to live with the Fouchers. And was not Victor full of work, and already nearly famous? In brief, the marriage took place on the 12th of October, 1822.

Does this love-tale, so beautiful in its beginning—beautiful with strong tender passion, and energy, and high resolve—does it continue beautiful to the end? There is, to quote Lord Tennyson again, a fierce light that beats against a throne; and of both Victor Hugo and Madame Hugo it may be said that they sat enthroned among their fellow men, and that the fierce light did not spare them. When I think of the episodes of this courtship and marriage, of the glow, as of early summer, which this time reflected upon the poet's

¹ He had already sent Victor Hugo 500 francs some months before for the ode on the assassination of the Duc de Berry.

verse, I confess that there also comes back to my mind an autumn picture—"autumn in everything," as Mr. Browning sings—that has been sketched for us by M. Asseline, Madame Hugo's cousin.

We are at Guernsey, at Hauteville House, during the days of the poet's exile. Some forty-three years or so have passed since his marriage. Madame Hugo—but why not tell the tale in M. Asseline's own words, which are wanting neither in skill nor pathos?

"There are," he says, "certain hours of life that sorrow marks for her own. I went one autumn day into Madame Victor Hugo's drawing-room at Hauteville, and found her alone, sunk in sad thoughts, and lying back seemingly exhausted. Her eyes had already grown very weak, and she could not see how painfully I was impressed at finding her so poorly. 'You are not to dine with me to-day,' she said. 'And why?' 'Our gentlemen have organized a little merry-making at Madame Drouet's, and they are expecting you.' 'But I prefer to dine with you; I shall certainly not leave you alone.' 'No, I shall dine with my sister; and really I should take it ill if you stayed. I insist on your going to Madame Drouet's. It will please my husband. There are few opportunities of pleasure-making here. I repeat that you are expected. Go, you will laugh, and the time will pass gaily.' I looked at my cousin as she sat in the shadow of the great curtains with their heavy folds. Her forehead was of marble, her lips without colour, her eyes almost lifeless. Then I drew my armchair nearer to hers, and we lost ourselves in endless talk. . . . The day was waning. We exchanged no thoughts that were not of sadness. 'Go, go,' she said at last; 'you would only make me cry!' I took a few steps towards the door. She called me back: 'You will write down for me that fine passage of verse you were quoting a moment ago:—

" 'Time, the old god, invests all things with honour,
And makes them white.'

and now be quick and join your cousins; don't keep them waiting."

One can almost see her as she sits there in the

gloaming of her life, thronged by shadows from the past. And who was the Madame Drouet to whose house her husband and sons had gone for merriment? She was an actress, and long years before had won the poet's good-will by taking the somewhat inferior part of the Princess Negroni in his play of "Lucrèce Borgia;" and she had too figured as Lady Jane Grey in "Marie Tudor." She had also been, if we may believe his assertion, the most beautiful woman of this century; but then the statement seems to have been made in her presence, which would excuse a little flattery, and Victor Hugo, moreover, never stood in sufficient awe of a superlative. The very fairest among the many million daughters of Eve born into this world of ours between the years 1800 and 1875, or thereabouts! That were indeed a proud position. One rather ventures to doubt whether Madame Drouet, even in the noon of her beauty, can have been quite so beautiful as *that*. Superlatives apart, however, there can be no question of her real graces of face and form. Are we not told that the record of them remains, modelled into Pradier's colossal statue of the town of Lille, on the Place de la Concorde, at Paris?

This lady had helped Victor Hugo to escape from Paris in the bad days of December, 1851, after the *Coup d'État*. She had followed him to Brussels and Guernsey. She was, I am quoting M. Asseline again, "the veiled witness of his labours," "the discreet confidant of his genius," his "muse," his "very soul," his "Beatrice." Much of his verse was inspired by her. During later years she was his constant daily companion. Nor, especially as seen

in the beautiful still starlight of age, can she be regarded as aught save a gracious and dignified figure. There was something queenly, we are told, in her crown of silver hair, with its sheen of palest gold. "I do not think," says M. Asseline, "that any one ever possessed more tact. In a delicate position she evinced a perfect dignity, and an irreproachable delicacy of conduct. Her tenderness" for Victor Hugo "had with years melted into veneration. A kind of august effluence seemed to pass from one to the other."

Dante's wife, who bore his children, and finds no place in his verse—I have often wondered what she thought of Beatrice. And Beatrice was, after all, but an ideal, and as a vision of one dead and seen in glory. Madame Drouet was no vision. She was a woman of very real flesh and blood, whose influence on the poet was persistent and diurnal. Such a Beatrice might well be among the shadows that collected round Madame Hugo as she sat 'all alone that autumn evening in the gloom of the old oak and tapestry of Hauteville House.

But, after all, I have no wish to exaggerate, or weigh upon this matter unduly. There are many shadows that will haunt age and ill-health, even when there is no Madame Drouet in the case; and to endeavour to find the truth in the obscure heart-relations of two human beings is mostly groping and guess work. Through what vicissitudes of love the poet and his wife had passed, who shall tell? "*L'Homme qui rit*" is the latest but one of his novels, and in it there is a passage which would seem to have been suggested rather by his feeling for her than for his silver-haired Beatrice :

“The heart,” he says, “grows saturated with love, as with some divine salt which keeps it from decay. Hence the incorruptible adherence of those who have loved one another from the dawn of life, and the freshness of an old love that is prolonged. There exists an embalmment of love. It is of Daphnis and Chloe that are made Philemon and Baucis. In such cases old age is like youth, as evening is like morning.”

As to Madame Hugo, within a year of her death, in 1868, and almost blind, she writes: “My husband is leaving Brussels the day after to-morrow. He is young, and of exceptional strength; he is happy and covered with glory, which is my greatest joy.”

And so, by a natural transition, we go back to the year 1822, when life and love were in their morning glow together, and the young poet was looking forward gaily, confidently, to his new life and its responsibilities. Money was of the rarest; work was a necessity; and from work Victor Hugo never shrank. Within a couple of months of his marriage he had written two more odes—one, of considerable beauty, on Louis XVII., the poor little captive king. A second edition of the odes appeared before the end of the year. And moreover he was busy with a novel begun in May, 1821, set aside for a time after his mother’s death, and to be soon published anonymously in February, 1823.

This novel is “*Han d’Islande*,” and may not unfairly be described as a very juvenile work, which would long since have faded into the night of oblivion if it were not for the reflected light of “*Nôtre Dame de Paris*” and the “*Misérables*.” Victor Hugo himself, writing in 1833, calls it the production “of a young man, of a very young man;” says that it was written “during an attack of

fever;" declares that only the love passages have any basis of reality; and concludes that if it "be worth classing at all, it can only be classed as a fantastic novel." After so frank an admission, the critic is, of course, half disarmed. He can do no more than put the arrows of his satire back into the quiver. So I shall not dwell unduly on the character and habits of Han, the hero, though these can scarcely be accepted quite seriously. For Han is a kind of "man-beast of boundless savagery," who, living his baleful life in the Norway of 1699, indulges cannibalistic propensities, tears his human prey with long claw-like nails, and assuages his grief for the death of his son by cutting that young man's skull in two, and using the upper half as a drinking cup. An eccentric way of showing honour to the deceased, no doubt, but not more eccentric than the beverages quaffed out of this amazing vessel. Han's "particular vanities," as Mr. Stiggins would have said—and by the by he resembled that worthy in the character of his gloves, which were very large and worn constantly, so as to hide his talons,—his particular vanities were the "blood of men and the waters of the seas." Pah ! how nauseous and improbable ! Of human blood I say nothing, and for sufficient reasons ; but sea water ! Even when put into the plural, and set before an ogre, I defy him to drink it out of anything but bravado. Canning, speaking in the dark ages of gastronomy, declared that if any one said he preferred dry champagne to sweet, he told a lie. I am bold to make the same assertion with regard to Han, if he alleged any real liking for his "waters of the seas."

It will be gathered from the above that "Han d'Islande"

is a book in which the horrible plays a considerable part. And this is so. With such a protagonist as Han, murder and bloodshed are not likely to be wanting. Part of the scene is laid in the dead-house at Drontheim ; and the keeper of the dead-house, a fantastic pedant of the name of Spiagudry, is a not unimportant actor in the story. Among the other *dramatis personæ* are an old noble, Schumacher, kept in prison by the intrigues of his enemies ; his sweet and lovely daughter Ethel ; and the son of one of Schumacher's chief enemies, a young officer, called Ordener, who, for love of Ethel, dares Han in his lair, to get possession of a casket containing the proofs of Schumacher's innocence. Among the incidents are a revolt of miners, and a terrible massacre of soldiers, after which "certain poor goatherds" see "in the gloaming" a "beast with a human face, drinking blood, and sitting upon heaps of the slain." There is finally a good deal of "business" of one kind and another. Han delivers himself up to justice for no very obvious reason, and sets fire to his prison and the contiguous barracks, perishing in the conflagration. Schumacher's enemies receive the reward of their misdeeds. He is released and reinstated in royal favour ; and Ordener and Ethel are married and live happy ever after.

A book of an obsolete type, of a type which seems to have been popular at the beginning of this century, when Maturin and "Monk" Lewis were writers of renown, but now altogether of the past. Think what inextinguishable laughter would play like sheet lightning round such a book if published in this year of grace

1888. And yet it may be safely affirmed that of the novels published in 1888, not one in a hundred will be equally well written, or show such in-born power of clear and effective narration. Smile as we may at Han and his blood and bones, the man who at twenty could write this book had a great future before him.

“Han d’Islande” was criticised pretty freely, especially by the liberal journalists ; but it won the favour of Charles Nodier, himself a novelist of no mean renown, a critic, a bibliophile, and also incidentally a graceful poet. He, a much older man than Victor Hugo, took the latter into his affectionate regard, and introduced him to his own wide circle of friends. Nor was this the only piece of good fortune that the book brought with it. The publication took place in the first part of February, 1823, and before the month had run its course, the king increased the poet’s pension by 2,000 francs, and thus enabled him, in the following month, to leave M. Foucher’s hospitable dwelling, and set up housekeeping for himself. But joy and sorrow,—such are the alternations of human life. As the rapture of the young couple’s marriage-day had been broken in upon by the suddenly-declared insanity of Victor’s brother Eugène, so now did a sad bereavement come to mar the happiness of the first months of their wedded life. A son was born to them in August, and in October the baby died.

That the poet worked hard at this time was almost a matter of course. In this very year 1823 he seems to have written upwards of twenty odes. In May, 1823, after some squabble with his publishers, he brought out a second edition of “Han d’Islande.” In July there

appeared the first number of a periodical, the *Muse Française*, that lasted just a year, and to which he contributed two odes and five prose articles. These last were afterwards reproduced, but with certain alterations, in the "Littérature et Philosophie Mêlées." They include a not very remarkable paper on Byron, then just deceased, and one, of greater importance, on "Quentin Durward." The latter has a special interest as showing what was the ideal of a novel formed, even at this early date, by the future author of "Nôtre Dame de Paris" and the "Misérables." "The novel as written by Walter Scott," he says, "is picturesque but prosaic. There is another novel that remains to be created, a novel more beautiful, to our thinking, and more complete. That novel will be at once a drama and an epic, it will be picturesque but poetical, real and also ideal, true and at the same time great. It will graft Walter Scott into Homer." Sir Walter prosaic—that may well seem a hard saying. Nor can one quite avoid a smile at reading, among the suppressed passages of the article, a paragraph in which the loyal and patriotic Victor falls foul of "that Scotchman" for selecting Louis XI. from among the roll of French kings as one of the characters of his novel. "None but a foreigner," he says, indignantly, "would have thought of such a thing. Well may we recognize in this an inspiration of the English muse!" Little can the poet have foreseen, when he shot this shaft at perfidious Albion, what a part the same Louis XI. would play in his own novel of "Nôtre Dame."¹

¹ The preface to the "Littérature et Philosophie Mêlées" implies, not quite ingenuously, that the various papers had been reprinted without alteration.

A second volume of odes, under the title of "Nouvelles Odes," appeared in March, 1824. The preface is an important document, as showing how little, even yet, the poet was prepared to step forward as the leader of the Romantic movement. He declares that, "for his part, he is profoundly ignorant of what the *Romantic* style and the *Classic* style may happen to be;" deplores the division of contemporary literature into two hostile camps; is anxious to be a messenger of peace between the contending parties; is anxious, above all, to guard against all "suspicion of heresy in the quarrel"; is full of "respect" for the "great name of Boileau," who, as he says, "shares with our Racine the great honour of having fixed the French language, a fact which in itself would suffice to prove that he too had a creative genius." And in a long letter to the *Journal des Débats*, dated the 26th of July, 1824, he takes up the same points, and is at great pains to prove that he had in no way innovated in his use of language, and that writers recognized as classic had employed expressions and images analogous to those for which he had been censured.

The preface moreover contains one or two eloquent passages of what may be described as "throne and altar" literature; and the same spirit breathes in the odes themselves. But for detailed analysis I have unfortunately no space. What has been said of the first volume of the odes must do duty for criticism on the second. Both deal with the same class of subjects, and in much the same way. That treating so often of the matter of politics, the verse has a tendency to eloquence rather than poetry, is true. Yet can one not help admiring

the virility of the themes selected. There was something of manhood in a lyre that vibrated so readily to any large national interest or feeling. And as the poet went on striking the strings, he decidedly acquired greater skill as a musician. The poetic quality of the verse in the second volume is better than in the first.

Louis XVIII. was a gentleman of the old school, who loved his ease and his Horace, and possessed a full share of the old French courtly *esprit*. Though he certainly read the young poet's poems, it may be doubted whether their fervour was quite to his taste. But neither he nor his successor, Charles X., could afford to overlook a writer of such unmistakable power and so eminently "well-thinking." The most popular poet of the time was without doubt Béranger, whose songs, borne on the wings of music, were finding their way into every hamlet of France. And Béranger was not "well-thinking" at all. As he explained in some of the wittiest and most deftly turned of his ringing couplets, the king could not be counted among his friends. His verses, now half wrapt in oblivion, were then as pebbles from the brook, thrown by some master-slinger and whistling round the monarchy and the accepted faith. They were a distinct political power. All the more did it behove the Government to encourage writers who were good royalists and good Catholics. Accordingly, some very acceptable rewards in money had been bestowed on Victor Hugo by Louis XVIII. Charles X., who succeeded his brother on the 16th of September, 1824, added to these a coveted distinction. On the 29th of April, 1825, Victor Hugo, and his brother-poet and friend, Lamartine, were made knights of the

Legion of Honour. Madame Hugo tells how her husband and herself, and their infant daughter Léopoldine, born in the previous year, were just starting in the *diligence* for Blois, on a visit to General Hugo, when the letter announcing Victor's nomination was placed in his hands. A pleasant surprise for the father, when they reached their destination, as may be supposed. He detached the piece of red ribbon from his own button-hole, and transferred the honourable badge to the coat of his son. As a further mark of royal favour, the poet received, while at Blois, an invitation to the king's coronation at Reims, on the 29th of May. He went. But the ode in which the event is commemorated is scarcely one of his happiest efforts.

This same year 1825 marks the point at which Victor Hugo's genius, which had hitherto been flowing on in a fairly smooth and even bed, suddenly takes the decisive leap in its rush towards Romanticism. So far he had not given in his adherence to the new school. He seemed unaccountably to be hesitating, temporising, hanging back. Henceforward there will be no doubt as to his position. In the poems written during this year, especially the ballads, there is a marked advance. In the preface to the third volumes of the odes published in the October of the following year, 1826, there is an entire difference of tone. As Madame Hugo says, he there "resolutely unfurls the standard of liberty in literature." In 1827 he was rallying to that standard the flower of the intellectual youth of France, and boldly standing forward as their acknowledged chief.

CHAPTER IV.

THE nineteenth century dawns sooner, I think, in Germany than in either of the other two great intellectual countries of Europe. Possibly the admirers of the eighteenth century would account for this by saying that there is some slight haze, as of early morning, in the German genius, and that our own age is nebulous, and lacks definiteness and clear precision. I would rather suggest, as one of many explanations, that Germany had no great classic literature from which to emancipate herself. It was not till the eighteenth century had passed its meridian that she could boast of writers who, as artists in language, rank with the great poets and prose-men of England and France. Her literature, being young, was untrammelled by the past, and, like Chaucer's monk—

“ lette old thinges pace,
And held after the newe world the trace.”

Accepting this explanation for what it is worth, of the fact itself there can, I think, be no question. Take a piece of literary criticism by Dr. Johnson, or of art criticism by Sir Joshua Reynolds, and compare it with a piece of criticism by Lessing, and the great relative modernness

of the latter is at once apparent. It is the criticism of intuition and imagination as opposed to the old criticism of plain common sense. So too in poetry, Schiller, and even Olympian and semi-classic Goethe, were precursors.

Close after the Germans came our own great poets of the last decade of the eighteenth, and the beginning of this century. And here the task was in some ways harder. A strong current had to be stemmed, an effort towards emancipation to be made. Pope and even Dryden were still a living influence, when Wordsworth, Coleridge, Scott, Shelley, Keats, and Byron undertook, each after his several kind, to renew the language of poetry, break up the mould in which verse had so long and so mechanically been cast, and give to words and rhythm their full music, and freedom, and varied charm. To shake off the trammels of an immediate past was the first work which these great poets had to do. But in doing it, what help did they not receive from a still earlier past? If their own practice and theories were called in question, could they not appeal to such precedent and authority as few Englishmen at least were likely to gainsay? What names had the "classic" school in English poetry to put beside the names of Shakespeare and Milton? Was there any classicist, however hide-bound, however full of reserves and doubts, who could boldly refuse to admit the greatness of Chaucer, and Spenser, and of the dramatists of the days of Elizabeth and James I.?

France stood in a different position from either Germany or England. Unlike Germany, she already possessed

a body of literature universally recognized as of supreme importance and high artistic merit. Unlike England, the body of literature which she possessed was, on the poetical side at least, almost wholly classical. No one certainly would desire to diminish in aught the lustre that lingers round the names of Villon, the poet-thief, and Charles d'Orléans, the poet-prince, or to deny the wit and vigour of Clément Marot, and the grace of Ronsard. But to put these names in juxtaposition with those of Shakespeare or Milton, were to court ridicule. None but an enthusiast would even put them beside the names of Racine and Corneille, of Molière and Lafontaine. Sainte-Beuve did not venture to do it even in the full ardour of his romantic time. The later men, in truth, were so great that they dwarfed and hid the earlier. The French Romantic movement had to fight its way against the opposition of Racine, and with no such pioneer as Shakespeare.

And so it came tardily. Victor Hugo did not decisively and openly take up the standard till 1826; and in 1826, Wordsworth, Coleridge, and Scott had long executed their best work, and Keats, Shelley, and Byron were dead.

Yes, the movement came tardily; and, did space allow, there would be an interest in marking its course. Chateaubriand helped it forward unquestionably by his eloquent insistence on the picturesque beauty of the Christian faith as seen in history, and by his largely-executed pictures of nature. Madame de Staël helped it too by giving to the French mind a glimpse, and more than a glimpse, of Germany. England assisted likewise,

through the influence of Byron, whose fame, unlike that of his poet contemporaries, overleapt the narrow seas, and became European,—and also through the influence of Scott. In 1819 came the publication of the fragments left by André Chénier, who had been done to death by the Revolutionary Tribunal but a day or two before the fall of Robespierre in 1793. Poor André Chénier!—legend, which in its way is often truer than history, speaks of him as striking his forehead just before the fall of the fatal axe, and exclaiming, “There was something *there!*” Yes, there was something there, no doubt, something no less important than a renovation of the poetics of France. Half a Greek in blood, more than half a Greek in spirit, with a knowledge of Greek and Roman antiquity to which Keats made no pretension, and a command over language—a verbal brush-power, if I may use the expression—scarcely inferior to Keats’ own—he was distinctly the greatest force that had appeared in French poetry since the setting of the *Grand Siècle* of Louis XIV.

Chénier’s poems were first published in 1819. In 1820 appeared Lamartine’s “*Méditations*,” and the Romantic movement though not in an aggressive way, was definitely started. The latter book at once took the world by storm. There was something of novelty and delight in verse of such exceeding harmony. It seemed to flow like a wide and beautiful river, large and limpid, and mirroring of preference in its waters the far heavens above—and reflecting the banks too, but these last somewhat less definitely, and with no strong precision of outline. At the same time there was a young officer in the

royal guard, Alfred de Vigny by name, who was writing what the world will not willingly let die. He wrote little, whether then or afterwards. The poems which he published during his life, though he lived long, fill a slender volume only; and an equally slender volume, "Les Destinées," appeared after his death. But among the earlier poems are "Eloa," the story of the angel born of one of Christ's tears, and "Madame de Soubise" a story of St. Bartholomew, and "Dolorida," and "La Frégate la Sérieuse"; and pervading the later verse there is a sombre stoicism of singular individuality and power. Judging by quality, as a poet should be judged, Alfred de Vigny keeps the pride of place which he won for himself in the years following 1820.

Victor Hugo, as we have seen, had hesitated somewhat before openly giving his adherence to the movement. When he did do so, he leaped almost at once into the position of its acknowledged chief. Of the men who might, perhaps, have contested his chieftaincy, Lamartine, though equally copious, never had his fire and overmastering energy, and De Vigny wrote little, wrote fastidiously, and was in no sense a leader of men. The third volume of the odes (together with certain ballads) appeared in October, 1826, with a preface more advanced in tone than any the poet had yet published. The verse itself was in every sense newer, especially in the ballads. These were not our modern-antique friends, of which we have had so many lately, the ballades with an *e*—one of those complicated exotic forms of verse from which the real essence of poetry seems somehow to evaporate with such ease. They were ballads with a

story in them, or some fantastic, light, tripping, aërial description of the legendary creatures, sylph or fairy, peri or gnome, that haunted the Middle Age or Eastern imagination. There was a Devil's frolic, and a giant's monologue—things which would have been an abomination to the plain eighteenth century—and there were love-stanzas to a mediæval Madeleine. The whole is full of grace and music.

At the same time Victor Hugo was writing a very serious drama. Whether this play was originally planned for actual performance, is a moot point. In France, as we all know, there is not the same practical divorce that there is in England between literature and the stage. Nearly every French writer of power in verse or fiction feels drawn, sooner or later, into the glare of the foot-lights. There is no inherent improbability therefore, but rather the reverse, in Madame Hugo's statement that her husband thus early felt the general attraction, and wrote his drama with a view to its performance by the great actor Talma. M. Biré, however, doubts the story, and gives cogent reasons for his doubts. I shall not venture to decide between the two. What is certain is that Talma died at about this time, and that "Cromwell," for such was the subject of the piece, soon acquired such gigantic proportions as effectually relegated it to the position of a drama "for the closet."

But if the play was for the closet, the preface was for the battle-field. As Cardinal Newman tells us he has ever dated the beginning of the Tractarian movement from the preaching of Keble's Assize sermon at Oxford, so might many an ardent Romanticist date the origin

of the Romantic movement from the publication of the “*Préface de Cromwell*” in October, 1827. “It shone in our eyes like the Tables of the Law on Mount Sinai,” says Théophile Gautier, “its arguments seemed to us irrefutable.” Never did some sixty pages of eloquent prose come into the world with more aggressive opportuneness.

“The present generation,” I am quoting Théophile Gautier again, “must have some difficulty in conceiving the state of effervescence in peoples’ minds at that time. A movement similar to the Renaissance was in progress. The sap of a new life flowed everywhere impetuously. All things were simultaneously germinating, quickening, burgeoning, bursting into leaf and blossom. The flowers exhaled a passionate perfume, the very air was an intoxicant; we were mad with lyric ardour and art. We seemed to ourselves to have discovered the great lost secret—and so we had, the lost secret of poesy.”

It was among minds just ripening for this state of ecstasy that the celebrated “*Préface*” came like a summons to arms and conquest. Nor did the trumpet now give an uncertain sound. There was no halting, no hesitation any longer, no doubt as to what the difference between the Classic and Romantic schools might happen to be. Boldly, perhaps even rashly, did the writer declare that there had been three ages of poetry, each answering to a given state of society, the ode for primitive times, the epic for antiquity, the drama for to-day. “The ode,” so the writer declares, “sings of eternity, the epic solemnizes history, the drama paints life.” But to paint life, the drama must often be prepared to set the beautiful to one side. Nay, it is a law of the highest art that the beautiful itself will be enhanced by the juxtaposition of what is ugly. Thus

the grotesque comes into being. As to the "unities," they are naught. As to Racine, he is a "divine poet," if you like, but not a dramatist, not, above all, to be accepted as the typical writer of French verse. And in a brilliant passage the writer describes his ideal of what a dramatic style should be.

"Dramatic verse," he cries, "should be free, frank, direct, sufficiently outspoken to say everything without prudery or affectation; able to pass by natural transition from the comic to the tragic, from the sublime to the grotesque; by turns matter-of-fact and poetical, at once artistic and inspired, profound and full of surprises, large and true; skilful to vary the pauses in the line so as to break the monotony of the alexandrine; rather prone to run a sentence from one line to another than to imbroil it by inversion of the words out of their ordinary sequence; faithful to the rhyme, that queen-slave, that supreme grace of our poetry, that generating power of our verse; inexhaustible in variety; too subtle for analysis in its elegance and technical qualities; able, like Proteus, to take a thousand shapes without changing its real type and character; sober of declamatory speech; playful in the dialogue; faithful to the character of the person represented; mindful to keep its due place, and only beautiful as it were fortuitously, in spite of itself, and unconsciously; by turns lyric, epic, dramatic; able to run over the whole poetic scale, and go from the bottom to the top, from the highest to the most vulgar thoughts, from the most broadly comic to the most grave, from the most concrete to the most abstract, and yet never passing outside the limits of a spoken scene."

Racine not a dramatist! Shakespeare the "highest poetic altitude of modern times"! O evil days, O perversion of public taste! cried the outraged classicists. O dawn of a new and splendid era! answered their Romantic opponents. But Victor Hugo was mindful of the fact that an artist's theories must be proved by his practice, not his reasoning. As Shelley says,

“It is a dangerous invasion
When poets criticise. Their station
Is to delight, not pose.”

So together with the “*Préface de Cromwell*” came “Cromwell” itself. Unfortunately the edifice is, I think, scarcely as striking as the portico. The play is hardly one of the poet’s great plays. The whole action turns on Cromwell’s desire to be crowned king, and the plot, in so far as it can be called a plot, consists in the exhibition of the various forces opposed to the realization of his wishes—the last words being Cromwell’s half-musing aside, “When then shall I be a king?” But even so we scarcely reach a very striking or effective dramatic climax. The first act, I confess, always seems to me better adapted to the libretto of an opera than to a serious historical drama. For there are degrees of admissible improbability even on the stage. We allow a larger latitude to poetry than to prose, and to music than to either. And so it seems to want a chorus of male voices to give even an air of probability to this meeting of Roundheads and Cavaliers, for the most part quite unknown to each other, who have come together in a public tavern-room to declaim treason and conspire against the Protector. How is secrecy imaginable in such conditions without basses and tenors, and a full orchestra?

But lest this criticism should be taxed with frivolity, I hasten to add—what indeed scarcely any one would now think of denying,—that with “Cromwell” the language of the poetical drama in France made an immense stride. And at the same time Victor Hugo

was renovating the language of poetry generally, was reviving ancient and forgotten metres, inventing new metres, and pouring a new and sparkling wine into the old bottles of French verse. The “*Chasse du Burgrave*,” with its echoing rhymes, and the “*Pas d’Armes du Roi Jean*,” are dated respectively January and June, 1828; and in January, 1829, again heralded by a warrior-preface, came out the first edition of the “*Orientales*.”

A brilliant, a superb book. It opens with a description of the cloud from the Lord that broke in fire on Sodom and Gomorrah; and it almost closes with a kind of dreamily expressed desire that the mists on the French horizon should suddenly break, and disclose a Moorish town sending up, like a rocket, through the evening sky, its minarets of gold. But why tantalise the reader thus? An English book is for English readers; else might I here quote freely. And translated verse? A translation that renders the music and colour of the original—that is at once really a translation and really poetry—such a translation is far rarer than a good poem. I am too obviously no Rossetti nor Fitzgerald, and have no intention of courting ruin by an attempt to emulate their renderings of the poetry of early Italy and of Omar’s “*Eastern lay*.” Not for me is it to “*English*” Victor Hugo’s masterpieces. I must ask my readers, therefore, if so be that French is unknown to them, to imagine the indolent swaying music to which “*Sara the Bather*” swings to and fro in her hammock over the waters of the fountain; and the superb march-movement of the “*Djinns*,” those Eastern imps,

who, as the verse swells in syllables and power, seem hurrying from some distance beyond distance till we hear round us the roar of their wings and the tumult of their onset,—sounds that gradually die away as, baffled and beaten, they retreat into the silence from whence they came. I must ask my readers too to take my word for the light that palpitates through it all, and the brilliant colour, and the great variety of tone,—the energy of the ode to Napoleon, the light grace of “Sultan Achmet’s” offer of love to the beauty of Grenada, the tragic directness of swift vengeance in the story of the maiden done to death by her brothers because her veil has been uplifted.

That these “Orientales” are of a doubtful Orientalism has been whispered by the erudite. But what can that possibly matter? Byron’s “Bride of Abydos,” “Giaour,” and “Lara,” Moore’s “Lalla Rookh,” these “Orientales” themselves, must be judged as poems, as pieces of art whose “motive” is of the Morning-land, and not merely from the standpoint of the traveller and the historian. And whatever be the verdict on Byron and Moore, there can be no doubt that as pieces of art these poems of Victor Hugo are superb. The workmanship is of the finest quality. This is scarcely the time and place for a discussion on the technicalities of French verse, else might one here descant learnedly on “rich” rhymes, and “supporting consonants,” and the “cæsura,” and the relations of the sentence to the line. Suffice it to say that judged by the highest standard in such matters, neither the “Orientales,” nor any of the other verse of Victor Hugo’s maturity, can be found wanting. Does this state-

ment coming from an English critic seem to require support? We may accept the testimony of Théophile Gautier and M. de Banville freely; for if Gautier and M. de Banville are not artists in words, they are nothing; and their reverence for Victor Hugo's technique amounts almost to a superstition.

As to metre, he seemed to play with it. Sainte-Beuve gave him at about this time an old copy of Ronsard, inscribing it to the "greatest lyrical inventor French poetry has known since Ronsard;" and the praise had been fairly won. I shall take but one example from the "Orientales"—the Djinns, to which I have already referred. The first verse is in lines of two syllables, the second verse in lines of three, and so on till the central verse, where ten syllables are reached,—after which the verses decline, in the same way, till the last verse, which consists of lines of two syllables again. A mere feat of verbal juggling the reader will say, and no more to be ranked as poetry than an acrostic. Not at all. The poem is poetry, and poetry of a high order, and the lines of varying length are so used as to emphasize the idea, and give it its fullest force. I know no finer *crescendo* and *diminuendo* in verbal music.

No wonder that poetry of this freshness and beauty, on its first blossoming into that ardent young world, acted as a kind of lyrical intoxicant. No wonder that the youth of the time hailed the writer as their hero, their demi-god. M. Amaury-Duval, writing of days just anterior to these, and of the joyous simple dances in Nodier's rooms at the Library of the Arsenal, says:

“ The attitude of the poet in society was quiet and almost grave, and contrasted with a beardless face full of sweetness and charm. He did not take part, like Alfred de Musset¹ and the rest, in our youthful amusements ; but the serious side was not really, I think, the most important side of his character. Did he consider it necessary to affect gravity in view of his high mission ? If so, he was taking unnecessary trouble : his works alone, and his genius would have sufficed to awe us into respect and admiration.”

And Théophile Gautier, writing of the subsequent days of 1830, when the great battle of “ Hernani ” had been fought and won, tells us of the inward tremors with which he first sought an audience with the “ Master,”—of his going three times up the stairs before he mustered courage to ring the bell,—and then, half whimsically, compares his actual entry to that of Esther into the presence of Ahasuerus.

So between 1826 and 1830 was the “ Master ” held in reverence by the young Romantic school. They gathered round him as round their natural leader. And what brilliant names did the band contain ! Sainte-Beuve was one of them. He first made the poet’s acquaintance in January, 1827. They were brought together in this way : Sainte-Beuve had written two perfectly independent but sympathetic articles, on the “ Odes et Ballades,” for the *Globe* newspaper, a very distinguished organ of that time. Victor Hugo called to thank him for the articles. He returned the call, and there resulted a very close intimacy and friendship, destined too soon to pass into indifference and a very armed neutrality. The whole story of their relations is curious. I shall not, however, attempt to write

¹ Who has left so charming a memento of these evenings in the “ Réponse à M. Charles Nodier,” dated August, 1843.

it here. Suffice it to say, that while the friendship lasted either poet was not without influence on the other, and the flame of mutual admiration flared high. Sainte-Beuve afterwards asserted, in one of his interesting autobiographical notes, written long after this date, that the only time in his life when his singularly fluid nature had been really fixed and congealed was “in Victor Hugo’s world,” adding, however, that it was “then only by the effect of a charm.” And at the time he sang his friend’s praises *fortissimo*. As to Victor Hugo, *he*, as we know, always had a tendency to superlatives. There is one of his odes, written in December, 1827, and addressed “To my friend S. B.,”—who can be none other than Sainte-Beuve,—in which he addresses that young gentleman as an “eagle,” a “giant,” a “star,” and exhorts him to make the acquaintance of the lightning, and to roll through the realms of thought like a “royal meteor” with trailing locks. We, who chiefly know a later Sainte-Beuve, can scarcely recognise him in the character of a comet; and, even then, he himself, for he was always very reasonable, must sometimes have smiled at these grandiose epithets. Sitting somewhat apart in the shadow, and rhyming a sonnet to a white cap, or an eye of jet—this is how he lives in Alfred de Musset’s reminiscences, and I take it the sketch is truer to nature.

Alfred de Musset—he too was one of the band that pressed round the “Master.” Ah, charming and admirable poet, whose verse, to use his own poignant image, always trailed after it a drop of blood—whose life was ruined all the more irretrievably because he had glimpses of a better heaven than that sky of Paris that lowered

above his head—poor “*Enfant du Siècle*,” child of this age of ours which gave its offspring no better refuge against the sorrows of our human lot than drink—surely as a kind of epitaph over his career might fittingly be used those lines of Wordsworth,

“ We poets in our youth begin in gladness,
But thereof comes in the end despondency and madness.”

And there is another of Victor Hugo’s followers to whom these words would equally apply: poor Gérard de Nerval, who, after leading hither and thither a strange incoherent existence, hanged himself, in a hideous nook of old Paris, in January, 1855. But these are pitiful memories. I must not incongruously forget that we are looking at the generation of 1830 in its spring. There was no thought of the distant days of winter and death when Sainte-Beuve, and Musset, and Gérard de Nerval, and the two Deschamps, and De Vigny, and the exuberant, inexhaustible Dumas, and Delacroix, “the Hugo of paint,”—when all these and many more, poets, writers, artists, used to meet in the brave days of the Romantic movement, and recognized Victor Hugo as their chief.¹

¹ They called their brotherhood the *Cénacle*, from the upper room in which our Lord had partaken of the Last Supper with His disciples.

CHAPTER V.

MEANWHILE was no effort to be made towards rescuing the French stage from the thralldom of Classicism? Was the “*Préface de Cromwell*” to remain a barren manifesto, an empty trumpet blast preceding no advance of conquering arms? Was the author of “*Cromwell*” to rest content with a mere literary triumph, while the theatre could still boast itself unassailed and unwon? Not thus did Victor Hugo understand his duties as leader of the Romantic movement.

And here this England of ours did yeoman’s service, and pioneered the attack most effectually. In July and August, 1822, a company of English actors had endeavoured to perform the plays of Shakespeare for the benefit of the Parisian public, but had been met with an organized opposition, and cries of “*Speak French*,” “*Down with Shakespeare, he is one of Wellington’s aide-de-camps*,” and other popular amenities of a similar kind. In the latter part of the summer of 1827, the attempt was renewed. The great John Kemble’s lesser brother Charles came over from London,—in some trepidation, as his daughter Frances tells us—and with him other English actors and actresses, among

whom was a certain Irish girl called Miss Smithson. They took the fickle Parisians by storm. Since 1822 the Romantic movement had waxed and grown strong. Shakespeare became the rage. That young France in the least understood his language can very safely be denied. But the situations were new and striking, and the whole thing unconventional, and in accord with the whim of the hour. Miss Smithson especially achieved a real triumph,—“received a rather disproportionate share of admiration,” is the form in which Frances Kemble puts it. And that fair critic speaks also somewhat slightly of Miss Smithson’s “figure and face of Hibernian beauty,” and of her “Irish accent.” As to the niceties of the brogue, they were, no doubt, as Frances Kemble says, lost upon French ears, which would know no distinction between the English of Dublin and the English of London. But as for the “Hibernian beauty,” most of us, I think, would be inclined to say that the term is scarcely one of reproach, and that Erin’s daughters are not among the ill-favoured of the earth. Anyhow, Miss Smithson, brogue, beauty, and all, was for the hour the idol of the French public;—and one Frenchman of genius, Berlioz the composer, the Hugo of music, conceived for her a passion which has become historical, and married her five years afterwards, when her hour of popularity had passed, and she was ruined, and possibly a cripple for life. The Romanticists, it will thus be seen, carried romance beyond the sphere of their art.

Charles Kemble’s visit to Paris took place in September, 1827. In October is dated the “*Préface de Cromwell*.” And in the following May, Edmund Kean made a flitting

appearance on the French boards. He was drunk, according to the French tradition, when he came on the stage to play Richard III., and having kept the audience waiting for a very long time, was badly received ; but as he warmed to his work, his genius carried all before him. There was no resisting it. And his performance of Shylock, two or three days afterwards, made a lasting impression. I seem to remember, not so very many years ago, a dramatic feuilleton of Jules Janin, the famous critic, in which he spoke of the thrill of horror that went through the house at the deadly realism with which the Jew sharpened his knife upon his sleeve.

So with Shakespeare the romantic drama, in its right royal English dress, first found a place upon the Parisian stage. But obviously that was not enough. To really move a nation's heart, it is imperative to use that nation's speech. A foreign play is for the cultivated few only. It was for the French writers to "dare to follow," now that Shakespeare had "cleared the way." Accordingly, in the early part of 1829, Alexandre Dumas rushed forward with his play of Henry III., which came upon the public as something young, fresh, and full of exuberant life ; and, on the 24th of June, Victor Hugo had finished "Marion de Lorme."

The Théâtre Français, the Porte-Saint-Martin, and the Odéon all competed for the play ; and the Théâtre Français, as first in the field, was preparing to put it on the stage. But here the Government intervened. There is one of the acts, the fourth, in which Louis XIII. shows pitifully, and as a mere tool in the hands of his imperious minister, Cardinal Richelieu. Now

in July, 1829, the monarchy of the elder branch of the Bourbons was tottering to its fall. The attacks made upon it from all sides were incessant and most bitter. The king especially was accused of being under priestly government. M. de Martignac, the Home Minister, may therefore be forgiven if he thought the moment inopportune for the production of a play which might easily be used politically as a weapon of offence. Naturally Victor Hugo took a different view. He appealed from the minister to the king. The king granted him a private audience on the 7th of August; received him with the greatest affability and kindness; but, on reflection, did not see that it would be safe to yield. He, however, as some indemnity, offered the poet an increase of 2000 francs to his existing pensions. This Victor Hugo thought it right to refuse, though in most loyal, and one may almost say humble, terms; whereupon he became more popular than ever, and the opposition journals talked of his incorruptibility.

But, as Madame Hugo rightly says, “Victor Hugo was not one of those men who are discouraged by a check.” He at once set to work, began “*Hernani*” on the 29th of August, and, on the 1st of October, read it to the Committee of the Théâtre Français.

Then there ensued, as before, a great battle, a series of skirmishes, excursions and alarms, affairs of outposts. On the 18th of December Victor Hugo wrote to a friend :

“You know that I am overwhelmed, overburdened, crushed, throttled. The Comédie Française, ‘*Hernani*,’ the rehearsals, the green-room rivalries of actors and actresses, the intrigues of the newspapers and the police; and, on the other hand, my private affairs, which are much embroiled, my father’s inheritance not yet

settled, our property in Spain of which Ferdinand VII. has taken possession, the compensation due to us in Saint Domingo and kept back by Boyer, our sands at Sologne which have been on sale for the last twenty-three months, our houses in Blois which our step-mother is trying to keep away from us, consequently nothing, or next to nothing, to be saved out of the wreck of a considerable fortune. Such is my life."

Not a very happy picture, certainly. But our immediate interest is with those special troubles that thickened round the production of "Hernani." To begin with, the performers were hostile. Mdlle. Mars, the great tragic actress, on whom had naturally devolved the chief part of Doña Sol, was a woman of fifty, and had little sympathy, as may be supposed, with novelties. Alexandre Dumas relates, in his sparkling way, how she would interrupt the rehearsals again and again, and worry the poor author with poetical suggestions. It was not till he threatened to take the part from her that she was brought to reason. Her frigidity froze the other actors ; and the bitterness of a terrible winter tended to freeze them still more. Meanwhile the press was not idle. Scraps and detached passages of the play leaked out, and were travestied and ridiculed. One scene was burlesqued upon the stage. The censorship also "made its reserves," contested the admissibility of certain passages, insisted upon changes in various lines, had to be reasoned with, bullied, cajoled. Finally the *claque*, the paid applauders who in a French theatre direct the popular enthusiasm, turned mutinous. Their loyalty could not be depended upon. They might even desert in the hour of battle, and go over to the enemy.

But against all forms of opposition, whether open and

angry, or occult and insidious, Victor Hugo showed a most admirable tenacity and courage. "We should not, perhaps, be able fully to understand the essentially militant character of his political and literary life," says Madame Hugo, "if we did not know from what a soldier-family he sprang." And here he showed himself a born fighter. If the *claque*, those hired mercenaries, would not support his cause, he would rely on the enthusiasm of volunteers. Word went forth among the students of the "Quartier Latin," the younger journalists, the artists going through their apprenticeship in the various "ateliers," that the future of the French drama, nay, of French poetry itself, was at stake. Théophile Gautier has told how Gérard de Nerval acted as recruiting sergeant, and went round distributing tickets for the first performance, and with what a passion of joy he, Gautier, received six orders, in solemn trust, with an adjuration to bring none but sure hands. Each ticket bore inscribed upon it the Spanish word, *hierro*, "iron."

And what a strange young generation they were to whom this call was addressed ! Together with a genuine enthusiasm for everything relating to art, using¹ the word in its most extended sense, how much of folly and wilful eccentricity ! Eccentricity, indeed, was their goddess. They hated with an undying hate the peaceful "bourgeois" who paid his debts, lived cleanly, foreswore sack, and cultivated only the prose of life. Such a man, according to one of these cannibalistic young gentlemen, was only fit to be eaten. To "asphyxiate" him "with the smell of punch, patchouli, and cigars" seemed a desirable object.

¹ The expression is that of Gavarni the great caricaturist, who, however, came into vogue a little later.

To adopt a name that could by no means be mistaken for *his* commonplace name was a clear duty. Thus, if the Romantic aspirant had been christened "Jean," he added a mediæval *h*, and called himself "Jehan;" if his name were plain "Pierre," he called himself "Petrus." Or else he gave a kind of pseudo-foreign air to his cognomen, and "Auguste Maquet" became "Augustus McKeat," and "Théophile Dondey" became "Philothée O'Neddy." There was one daring spirit who even ventured to designate himself as "Napoleon Tom." Napoleon Tom ! I declare there is a touch of genius in the combination. When one thinks of it, when one considers the absurdity of these outlandish designations, even the inexplicable seems streaked with a dawn of explanation, and one almost ceases to wonder whence Victor Hugo derived the amazing English names in "L'Homme qui rit." Even "Govicum," the pot-boy, and "Lord Tom Jim Jack," seem to have prototypes.

Nor were outward and visible signs of eccentricity wanting in the youthful band that crowded round the door of the pit of the Théâtre Français on the memorable 25th of February, 1830, when "Hernani" was to be first presented to the public. They have been often described. According to Madame Hugo they were "strange, uncouth, bearded, long-haired, dressed in every manner except according to the existing fashion, in loose jerkins, in Spanish cloaks, in Robespierre waistcoats, in Henry III. bonnets, having every century and every country upon their shoulders and heads." No wonder that the peaceful burgesses were "stupefied and indignant." Théophile Gautier especially "insulted their

eyes." His locks, like those of Albert Dürer, flowed far over his shoulders, and he wore a scarlet satin waist-coat of mediæval cut, a black coat with broad velvet facings, trousers of a pale sea-green seamed with black velvet, and an ample grey overcoat lined with green satin. Well might he speak enthusiastically, in after years, of the "phantasy of individual taste" that had "regulated" the "costumes" of the "champions of the ideal" who waited outside the Théâtre Français. His encomiums on their "just sense of colour" one feels inclined, in view of the sea-green trousers, to accept more doubtfully. As to the scarlet waistcoat, it has a place in history. It flames in the forefront of the Romantic battle like the white plume of King Henry of Navarre at Ivry.

Our young friends were admitted into the theatre at two, and the public were not to enter till seven. What was to be done meanwhile in the great ghostly unlit place? Talk offered a resource, and cat-calls, and endless songs, which the Government papers of the following day described as "impious," and the opposition journals as "obscene." The more prudent of the band had provided themselves with sausages, ham, chocolate, and bread; and an improvised pic-nic made the time pass pleasantly. When the audience began to assemble, they were greeted by a fine smell of garlic. O abomination of desolation! This is the holy of holies of the drama, in the "House of Molière"! Mdlle. Mars was furious. She had acted, she declared to Victor Hugo, before every kind of public; it was to him, to him that she must owe the indignity of acting before such a public as *that!*

However at last the performance began, and began coldly. But, as it proceeded, the admirable vigour of the verse, and, one may add, the stage effectiveness of the situations, began to produce their due effect. At the second act, where Hernani and Don Carlos, rivals in their love for Doña Sol, exchange words of hate and defiance, the clapping of the author's followers found an echo in a few boxes. This temporary success was, however, jeopardised by the scene in which Don Ruy Gomez too lengthily catalogues his pictured ancestry on the wall ; though, in the end, his refusal to violate his ideal of hospitality at Don Carlos' bidding, "brought down the house." Strangely enough, Charles V.'s long monologue before the tomb of Charlemagne first really clinched success and made victory certain. Poetry went for something in those days, and undramatic as that soliloquy may be, each line, as it flashed upon the audience, woke in them a growing enthusiasm. Before the applause had died down, an unknown publisher accosted the author, and offered six thousand francs for the right to publish the play, saying that at the end of the second act he had intended to propose two thousand francs, at the end of the third four, and that he should greatly prefer to close the bargain there and then, as at the end of the performance he might be tempted to give ten thousand. Victor Hugo, whose whole possessions happened at the moment to consist of fifty francs, or £2, laughingly concluded the bargain.

The fifth act was a triumph. Mdlle. Mars acted it superbly. In her love duet with Hernani—that duet which vaguely reminds one of the duet between Juliet

and Romeo,—her voice rendered admirably the music of the verse, and thrilled to its emotions. When Ruy Gomez, having first sounded his fatal horn, came to claim Hernani's life, she sprang up with an energy which was new even to her admirers, like a tiger in defence of her whelps.—And we too have seen that act not inadequately performed. We too have heard a silvery voice descanting sweetest love-music with Hernani; have watched the dawning horror on the face as the meaning of Ruy Gomez' visit became apparent; have seen the frail shape dilate in fierce defiance, and then sink down in passionate appeal for mercy; have noted how, amid the gathering darkness of death, love still flickered on in look and speech. So does Sarah Bernhardt act the part of Doña Sol; and to those who have seen the play thus acted it will scarcely seem strange that the first performance of "Hernani" came to a successful close.

But how about the second performance, when the appeal would be to the general public, not the cultured few? The first performance had been like Ligny or Quatre Bras before Waterloo. The great battle had still to be fought. And fiercely did it rage. Verse after verse, as the play went on, was assailed with Homeric laughter. Victor Hugo's friends replied with volley on volley of applause. And so again the toilsome evening wore through. Nor was this yet in any wise the end. After the third performance, the author had only one hundred tickets at his disposal; and the enemy were more eager than ever in the attack.

"Then indeed," says Madame Hugo, "did the real struggle begin. Each performance became an indescribable tumult. The

boxes sneered and tittered ; the stalls whistled ; it became a fashionable pastime to go ‘and laugh at “Hernani.”’ Every one protested after his own manner, and according to his individual nature. Some, as not being able to bear to look at such a piece, turned their backs to the performers ; others declared aloud that they could stand it no longer, and went out in the middle of the acts, and banged the doors of their boxes as they went. The more peaceable ostentatiously spread out and read their newspapers.”

For five and forty nights did the actors and Victor Hugo’s volunteers stand in the breach and carry performance after performance to the end ; and it was not till June 18, 1830, when Mdlle. Mars required a holiday, that the piece was withdrawn.

Thus was fought and won the great battle, or rather campaign, of “Hernani.” Romantic drama had made good its position on the French stage.

And shall we throw up our caps at the victory, and cry huzza with the “hirsute generation”¹ of 1830? Yes and no, I think. Dante, as it has always seemed to me, and I say it reverently, strikes a false note when he tells how—

“Cimabue thought
To lord it over painting’s field, but hark !
The cry’s Giotto’s, and his name eclipsed ;”

for the success of an artist in no sense detracts from the merits of his predecessors. And so, though quite prepared to admit that the French stage stood in need of a revival at the beginning of this century, and that the classical drama was senile and dying, yet am I not prepared to say that the French classical drama, in its first vigour and freshness, was anything but a superb

¹ M. Zola’s expression, “la race chevelue.”

product. Of course we must judge it by standards different from those which we are in the habit of applying. Taking Shakespeare as our great exemplar, what we look for, what delights us, in the higher drama, is an infinite play of life, a large variety of character, the evidence, in conception and language, of unrestrained power—power braving all danger, heedless of difficulty, and grandly daring if, by any means, it can enlarge the scope of art. The ideals of the French dramatists of the great period, Racine, Corneille, Molière, were quite other. What they aimed at was rather to circumscribe than to enlarge, rather to select, simplify, and concentrate than to hold the mirror up to nature, and show life in all its complexity. Shakespeare, having to paint a lover and jealous husband in *Othello*, gives to the love and jealousy, all important as they are, only a relative influence in the man's portrait. *Othello*—the soldier so essentially a soldier that he regards even the peaceful time of his courtship as “wasted,”—has a being and personality apart from his relations with Desdemona. Racine would have treated the story quite differently. *His Othello* would have been a lover, and jealous—and have been nothing else. Our whole attention would have been concentrated on that one point. The poet would have held himself false to his art if he had endeavoured to amuse us with matters which he, justly or unjustly, regarded as of secondary interest. Not love and jealousy under certain particular circumstances, and in a given individual of warlike habits and dark complexion,—but love and jealousy apart from all such adjuncts, and in their most concentrated form—such,

according to his conception, would have been the proper matter of a drama. A false conception, the English reader is at once tempted to exclaim. And yet I don't know. It seems to me at least a perfectly admissible conception. Granting at once, and of course, that Shakespeare's art is unapproachable, yet it does not follow that there is no room in the world for art of another kind. And if we once allow this, then can we certainly not withhold our meed of admiration from those whose art of that other kind was perfect. Nay, as regards Shakespeare himself, is the advantage in artistic method so invariably on his side? Does he always profit by giving full rein to the power that is in him? Take Timon of Athens and compare him with Alceste, the misanthrope of Molière. Timon, in his hatred for his fellows, almost casts away his humanity, and lowers himself to the level of one of Swift's yahoos. Alceste, so far from dropping his humanity, remains a gentleman. Here we have, on the one side, unbridled power, and, on the other, measure, restraint, reasonableness, tact. The art in which these qualities attained their highest ideal, as they did in the work of the French poets of the seventeenth century, is, of its own kind, great art.

However, though the subject is alluring, I must not be tempted to dwell on the beauties of Racine, Corneille, Molière, and of Lafontaine whose verse is as the very daintiest goldsmith's work in human language. My immediate purpose will be sufficiently answered if I have made it clear that the Classical party had something to say for itself when opposing "Hernani."

That play was first produced on the 25th of

February, 1830. It was followed on the 11th of August, 1831, by "Marion de Lorme," which had been previously prohibited by the Government of Charles X. This was followed in turn, on the 22nd of November, 1832, by "Le Roi s'amuse," which seems to have been made the occasion of a political manifesto, and was prohibited by the Government of Louis Philippe. Then came "Lucrèce Borgia," in the beginning of 1833; "Marie Tudor," on the 6th of November in the same year; "Angelo Tyran de Padoue," on the 28th of April, 1835; "Ruy Blas," on the 8th of November, 1838; and, finally, "Les Burgraves," on the 8th of March, 1843. The last-named failed to secure such success as to tempt Victor Hugo to work any more for the stage. It was only performed some thirty times, and met with great opposition.

And of the plays which Victor Hugo thus composed in view of the footlights, what shall we say? Clearly in composing them he was animated by the very highest literary ambition. It is difficult to read the "Préface de Cromwell," and the prefaces to each of the plays, without coming to the conclusion that he had braced himself to no less a task than taking the drama where Shakespeare left it, and carrying it to greater heights of historical accuracy and social and philosophic truth. A magnificent ideal without doubt; and to the honour due to those who fail in the greatest attempts, he is unquestionably entitled. For failure to reach such high altitude, there obviously is. Of Victor Hugo's social philosophy I shall have occasion to speak hereafter. Suffice it to say here that one can scarcely think without a smile of the light

in which it would have appeared to Shakespeare's pre-eminently large and equitable spirit. Nor can the historical pretensions be taken very seriously. This is a point on which Victor Hugo seems clearly to have been in the habit of deceiving himself. In his view, it was part of his mission as a playwright to "explain history;" and in a note to "Marie Tudor" he says :

" So that the reader may be in a position, once for all, to appreciate the more or less of historical certainty contained in the author's works, as also the quantity and quality of historical research undertaken by him in view of each of his dramas, he thinks it his duty to print here, as a specimen, the list of the books and documents consulted in writing 'Marie Tudor.' He could publish a similar catalogue as regards each of his other pieces."

The list thus announced with some little pomp is only calculated to inspire a moderate amount of confidence. It contains more than one obvious misnomer, and opens with a history of Henry VII. by "Franc Baronum," who cannot well be any other than our old acquaintance Francis Bacon. But, to let such trifles pass, what is of infinitely greater importance, the character of Queen Mary, as presented in the drama, is quite unhistorical and false. Poor Bloody Mary, we know her story very well. It has been told for us, with even more than his customary picturesqueness and skill, by Mr. Froude. It has been dramatised for us by Lord Tennyson.

" Mother of God,
Thou knowest never woman meant so well,
And fared so ill in this disastrous world.
My people hate me and desire my death.
. . . . My hard father hated me ;
My brother rather hated me than loved ;
My sister cowers and hates me. . . .
My husband hates me and desires my death."

Poor virtuous Mary, with the bigot-creed and the narrow intellect, who worked such ruin even to the cause she loved, who having the lion spirit of her race, yet did such jackal's work,—and all the time hungered so in her woman's heart for the child that never came and the love that never was hers—surely there is scarce a more pathetic figure in history. The Mary of Victor Hugo is the paramour of I know not what Italian adventurer, and prepared at any moment to cry her shame to the whole court, to her future husband's ambassador, to anybody who will listen. No one, however great he may be, has a right to play such fantastic tricks with a real character —still less to call the bespattering, history.

But if Victor Hugo has failed to improve on Shakespeare's social philosophy or history, has he at least equalled him in peopling the stage with living, acting, feeling, thinking men and women—human creatures of intensest vitality, but whose characters will yet bear the most minute dissection? No, no, the later poet, great as he is, has not done this. I am far from agreeing with those critics, as M. Zola for instance, who hold that all his *dramatis personæ* are mere marionettes, tricked out in doublet and trunk-hose, ruff and farthingale, all the frippery of any particular time, and with wood, wire, and bran where flesh, nerves, and blood should be. But if this is malevolent exaggeration, yet is it unfortunately true that in many of his characters, and those often the most important, a certain mechanical something is too obvious. Explaining the genesis of Triboulet, in “Le Roi s'amuse,” and Lucrèce Borgia, in the play of the same name, the author tells us—

“Take the most hideous, repulsive, complete physical deformity ; place it where it will be most striking—at the lowest, meanest, most despised stage of the social edifice ; light up that miserable creature from all sides with the sinister light of contrast ; and then throw into him a soul, and put into that soul the purest feeling given to man, the feeling of fatherhood. What will happen? Why that sublime feeling, heated according to certain conditions, will transform before your eyes the degraded creature ; the being that was small will become great ; the being that was deformed will become beautiful. In its essence this is ‘*Le Roi s’amuse.*’ Well, and it is also ‘*Lucrèce Borgia.*’ Take the most hideous, repulsive, complete moral deformity ; place it where it will be most striking, in a woman’s heart, with all such adjuncts of physical beauty and royal grandeur as may give prominence to crime ; and now mingle with all this deformity a pure feeling, the purest feeling that a woman can experience, the feeling of motherhood ; in your monster place a mother’s heart ; and the monster will become interesting ; and the monster will make you weep ; and that creature that inspired only terror, will excite pity, and that deformed soul will become almost beautiful in your eyes. Thus fatherhood sanctifying physical deformity—that is what we have in ‘*Le Roi s’amuse.*’ motherhood sanctifying moral deformity—that is what we have in ‘*Lucrèce Borgia.*’”

To me, I confess, in all this there is something mechanical and forced. Human characters are not compact of such tremendous contrasts. Certainly a monster like Triboulet—for in moral repulsiveness he is pretty nearly the fellow of Lucrèce—may love his offspring. Love is a flower that will grow almost anywhere. But it is scarcely a flower that will give out its fullest, purest perfume when growing out of so polluted a soil. And the attempt to excite interest by dwelling on the difference between soil and product can only lead to exaggeration and falsehood. Or take again the character of Marion de Lorme. Marion de Lorme is a noted courtesan.

Her life is a byword. Scarce a noble about the Court but can boast of her favours. Yet she becomes again all dainty-pure, as in her maidenhood, through her love for Didier. In other words, she abandons the world of realities, and becomes an antithesis.

Nor is it possible to place such lover-heroes as Hernani, Didier, and Ruy Blas beside Shakespeare's real men. They belong, all three of them, to a distinctly obsolete Byronic type, and talk too gloomily and too much of the fates, and destiny, and evil stars, and such other moody and uncomfortable matters. As to Ruy Blas, I go even further, and express disbelief in him altogether. What ! here is a poet of fine intellect and noblest sentiments, though wearing, for the sake of contrast, a lackey's coat ; he is in love with the queen ; he is left behind at Court by his master, for wicked purposes, in a position of power, and displays in that position the highest qualities of a statesman and a patriot : and yet, when his master comes back—a step which even imbecility might have anticipated—and declares an intention of dishonouring the queen, he, the poet and man of action, can find nothing better to do than whine like a whipped cur—no more effective way of defending his love than praying in churches and wandering about the streets ! Bah ! any man with a spark of manhood—having such advantages on his side too—would have made short work of Don Salluste de Bazan. Ruy Blas does not hold together as a man, a poet, a statesman, or a lackey. The best criticism on his character and conduct remains that of the spectators in the gallery when the play was first produced. They, we are told, used to cry out in their

jargon, as he stooped down to pick up his master's handkerchief, "Don't pick it up, you fool; have him run in."

A second Shakespeare? Hardly. Superb as are Victor Hugo's gifts, he is unable to sustain that comparison. But still, without being a Shakespeare, it is possible to be a very powerful dramatist; and Victor Hugo's plays possess merits of the highest kind. Of course, in judging them, we must always bear in mind that they were written directly in view of the stage. They are not, like Mr. Browning's dramas, for example, literature and literature alone. They are intended, and rightly, to show life according to theatrical conditions and as seen through an atmosphere of stage illusion. And when so regarded their strong points are not to be gainsaid. Each is constructed on lines so large and easily intelligible as not to disconcert the average spectator. The introduction is in every case deftly managed: we are placed at once, without long and tedious explanations, in the centre of the subject. The plot is skilfully combined for the purpose of exciting curiosity and retaining interest. If the incidents are too often those of a melodrama, and are caused rather by what may be called accident than development of character, yet no one can deny their stage effectiveness, and the opportunities they afford to the actor. Doña Sol (in "Hernani"), Marion de Lorme, the Queen (in "Ruy Blas"), have each the most excellent parts. So has Triboulet, whatever we may think, on reflection, of his truth to nature. No one who has seen M. Coquelin as Don César, that roystering, brave, black-

guard cavalier, can have any doubt of the author's power to produce a strongly vitalised character, at least for the stage. And to these gifts we must add a singular power in the management of dialogue. This, however, is praise which must be mainly restricted to the dramas in verse. For, by a singular phenomenon, the personages in Victor Hugo's stage-world speak far less naturally and forcibly when speaking in prose than when speaking to the cadence of metre. The difficulties of rhyme seem to nerve the dramatist to greater efforts, just as a minor poet will often succeed better in a sonnet than a simple ballad. So here the dialogue when in verse is almost invariably natural, alert, incisive, quick in thrust and parry as a rapier, now flashing with the brightest gems of imagination, now trembling with passion or sorrow.

Yet there are critics ready enough to tell us that, even from the stage point of view, Victor Hugo's "theatre" "threatens ruin," nay, that it lies in ruins already. Such critics hold that his art has permanently lost its power to charm and electrify an audience, and can never again possess more than an interest of literary curiosity. But this surely is altogether an exaggeration. I am prepared to give over to the tormentors the plays in prose, "Angelo," "Marie Tudor," and "Lucrèce Borgia"; for Victor Hugo, when writing these dramas in prose, became as one who throws away his arms in the hour of battle, and courts defeat. I am ready to allow that "Les Burgraves," notwithstanding the great power of the verse, is constructed on lines too large and epic for the modern stage,—that Barbarossa waking white-haired at his country's need from his immemorial

slumber, and the other old Rhineland demigods, with their hatreds that endure threescore years and ten, are fitter for the twilight of imagination than the comparative reality of the theatre. Even stage illusion cannot raise mere flesh and blood to such heroic proportions. But "*Hernani*," and "*Marion de Lorme*" and "*Ruy Blas*"? Time has told on them no doubt. Fashions change in fifty years. Yet to the criticism that holds them to be moribund or dead, one may fitly answer that there is in each a soul of poetry that will for ever keep it alive. Grant that in certain respects they are rather melodramas than dramas, yet are they melodramas set to incomparable verse. Music will make them immortal, a kind of superb verbal orchestration that for variety and power, for "sonority" and brilliance of effect, has no equal in French dramatic verse. Even if they had no other excellences, they would live,—as an opera may live though the libretto is naught. Never, I think, will the time come when such stage music will altogether fail of its appeal.

Was the "name" of "*Cimabue*" so entirely "eclipsed" when Giotto arose over the horizon? Did Racine and classic tragedy entirely suffer defeat in the great battle of "*Hernani*"? Between 1830 and 1838, "*Hernani*," "*Marion de Lorme*," "*Le Roi s'amuse*," "*Lucrèce Borgia*," "*Marie Tudor*," "*Angelo*," and "*Ruy Blas*" strutted bravely on the boards. But in those same years there was "a certain sorry little scrub," who "went up and down" Paris, "none" much "caring how;" and that "little scrub"—a lean slip of a girl, with intense dark Jew eyes, who bore the name of *Rachel*.—

proved to have power enough, when once her genius had declared itself, to stem the onset of Romanticism, and in her turn to take the world by storm with the old classic drama. Not as Doña Sol, Marion de Lorme, nor the Queen of Spain, did the incomparable actress^x achieve her triumphs. Fine as these parts are, she felt that in such characters as Racine's *Phèdre* there is a deeper, more poignant life; that through all changes of dramatic form the heart-strings of humanity are more passionately a-quiver in the older plays. And so once again Racine's beautiful old word-music, which is, as one may say, so purely of the strings, prevailed on the French stage.

But Victor Hugo's more varied orchestra of words and effects has in turn had its revivals, and that three at least of his plays will live, and live for the stage, I make no question.

^x Victor Hugo, characteristically, thought little of Rachel.

CHAPTER VI.

“VICTOR in drama” with “Hernani,” Victor in poetry with “Les Orientales,” it remains for us now to consider Hugo as “Victor in romance”¹ with “Nôtre Dame de Paris.” But in order to do this, I must retrace my steps somewhat. His last play, “Les Burgraves,” was produced in 1843; and to take up the thread of the novels it is necessary to go back some twenty years, to 1823 when “Han d’Islande” was first published.

Of that book I have already spoken; nor is it necessary to say more about it here. It is in every sense a juvenile production, and only interesting as the start-point of a great career. Three years afterwards, in January, 1826, appeared “Bug Jargal.” That short novel had indeed seen the light already in an earlier, simpler, and shorter form. It had been first written, according to the preface of 1832, in 1818, when the author was sixteen years old—written for a wager in fifteen days, and published in the *Conservateur Littéraire*. But in 1826 it reappeared in its present shape, greatly altered, and, in fact, rewritten. It must there-

See first line of Lord Tennyson’s Sonnet to Victor Hugo :

“Victor in drama, Victor in romance.”

fore be regarded as the author's first step, or rather stride forward in novel-writing, after "Han d'Islande."

"Bug Jargal" is a story of the rising of the slaves in St. Domingo. The author supposes that in 1793, or thereabouts, a number of French officers determine to relate their adventures for the purpose of beguiling the tedium of the long evenings by the camp fire. When Captain Léopold d'Auverney's turn comes round, he first declares that there has been nothing in his career worthy of fixing their attention. But then being pressed, he tells his tale. Though not born in St. Domingo he had been brought up there, and was living with his uncle, and betrothed to Marie his beautiful cousin. One of the slaves, a negro prince in his native Africa, also entertains for Marie a passionate attachment. This slave, Bug Jargal by name, is as generous as he is brave, fulfilled with every noble sentiment, a hero of romance. Jealousy against his white rival finds no lasting home in his breast. He tramples it under foot, and swears eternal friendship and brotherhood. On the very night of D'Auverney's marriage the insurrection breaks out. Murder, incendiaryism, outrage, stalk through the island. The bride and bridegroom have been separated by an untoward chance. Bug Jargal saves the former, and, afterwards, when D'Auverney is taken prisoner, and is about to be tortured to death, saves him too. He himself is shot by a lamentable accident. As to Marie she soon dies; and D'Auverney also, shortly afterwards, finds an end to his sorrows, for within a few days of the telling of his tale, he falls on the field of battle.

Such, very shortly stated, is the story of *Bug Jargal*; and it is told with unmistakable power and interest. That the hero's character is altogether life-like I will not affirm. Negroes, or even white men, of his stamp are rare. But in the world of art there is room for more than the prose of our every-day experience; and though Carlyle would certainly have objected to recognise the possibility of "the hero as nigger," we need scarcely be so exclusive. Decidedly the culminating point of the story is the description of the struggle between D'Auverney and a hideous, powerful hunchback, Habibrah, on the brink of a yawning gulf in a cavern. The prentice hand that wrought that scene was rapidly becoming the master hand that would produce the scene in which Claude Frollo falls from the topmost tower of *Notre Dame*.

Victor Hugo's next venture in fiction was "*Le Dernier Jour d'un Condamné*," the "last day of a man condemned to death." This book appeared anonymously^x in February, 1829, just three years after "*Bug Jargal*," and a month, it may be remembered, after "*Orientales*." It appeared therefore when the author was in the plenitude of his powers; and a remarkable harrowing book it distinctly is. A story? No, not exactly a story. Rather a psychological study, an endeavour to sound, with the plummet of imagination, the dark places in the soul of a man who has forfeited his life to human justice; and is about to be launched into eternity. The book is autobiographical in form, and the supposed writer describes the ghostly march of his own emotions through

^x In the third edition, however, also dated 1829, and now before me, Victor Hugo's name is given on the title-page.

the horror of great darkness by which he is surrounded. He is evidently an educated man, a man not at all vitiated by a career of crime, but blameless except in respect of the one act that has brought him to this extremity. His kindlier better feelings are unimpaired. He thinks of his mother, his wife, his child—"a little girl of three years old, gentle, rosy, frail, with large black eyes and long auburn locks." The shame that will splash up to them from his spilt life tortures him. In the midst of the ghastly nightmare of his waking and sleeping existence come visions of his childhood—of a garden—(Ah ! poet, was not that a reminiscence of the Feuillantes and thine own child-love ?)—in which he was wont to play with a little dark-eyed Spanish girl, till one day, as they read a book together, like Paolo and Francesca in the "Inferno," their lips met, and "On that day they read no more therein." Then he tries to look death in the face, but it daunts him. Anon he rages like some trapped animal ; and so he passes to his hideous end.

Victor Hugo describes the man's torture well. The writer who afterwards pictured so vividly the storm of guilty love that raged in the heart of Claude Frollo the priest, and the fierce battle of rectitude against self-preservation in the brain of Jean Valjean, was not likely to fail when dealing with such a theme. Nor does it at all impair the artistic merit of the book, viewed as a psychological story, that the evil deed by which the condemned man has brought himself within the clutches of the law should be kept so entirely out of sight. Accepting the author's first description of his work as that of a "dreamer," a "philosopher," a "poet," bent on

“observing nature for the benefit of art,” then have we comparatively little concern with the specific murder committed. Our interest is properly concentrated on the criminal, not the victim.

Directly, however, the author changes his front, as he did after the issue of the first few editions, and asks us to regard his book mainly as a serious argument in favour of the abolition of capital punishment, then one has a right to ask what crime had this amiable murderer committed. Doubtless it was a hard thing that he should be made to walk through the valley of the shadow of death prematurely, and in this particularly horrible manner. Yet, after all, the act for which he suffered was his own. But his victim, how had he deserved death? The light of the sun was as pleasant to him as to his murderer. Life smiled with equal kindliness on both. If it were repugnant to the one to be executed, it must have been far from agreeable to the other to be poisoned, throttled, or shot. And *he* had no choice in the matter. He was but a passive agent; while the poor criminal, with whose pains we are called upon to sympathise, might have kept his life out of jeopardy by simply observing the most ordinary rules of moral conduct. Surely the sufferings of the murderer constitute in this matter no argument at all. To dwell upon them eloquently, passionately, and to keep the sufferings of the victim out of sight, is to appeal to emotion and prejudice, not reason. Viewed as a pamphlet in favour of the abolition of capital punishment, the “*Dernier Jour*” is singularly inconclusive.

Unfortunately a similar weakness runs through nearly

all Victor Hugo's polemics on the question. It was Alphonse Karr, if I remember right, who wittily observed that he saw no objection to the abolition of capital punishment, but thought "Messieurs the assassins" ought first to show the way. Victor Hugo saw no necessity for that preliminary step on the assassins' part. Of course it was wrong to commit murder, very wrong; but the wrong was not of such a nature as to make the murderer liable to forfeit his own life in return. No wrong could be heinous enough for that. Judging on *à priori* grounds, he held strongly that society does not possess the right, even in self-defence, to cut short the existence of any of its members. Into the question whether that particular form of punishment was best calculated to act as a preventive for that particular class of crime, he seldom entered.

Nor can it be denied that something morbid mingled at last with Victor Hugo's genuine sympathy for any man condemned to death. In October, 1853, a murder was committed in Guernsey. The murderer, a sort of Government clerk called Tapner, belonged essentially to the class of human vermin. He was drunken; he was debauched. He lived with two sisters, of whom one was his wife, and the other his mistress. He had committed his crime with premeditation, and under circumstances of peculiar atrocity, first killing and robbing his victim—a woman—and then setting fire to her house to obliterate all traces of his deed. He was more than suspected of having done the same thing before. Of his guilt there could be no manner of question; and the law sentenced him to its extreme penalty. Whereupon Victor Hugo

moved heaven and earth to save the man ; and from his point of view was, of course, quite justified in so doing. But when the law had taken its course, and no mark of interest or sympathy could be of further practical avail, he made a kind of pilgrimage to the scenes—hallowed, I was going to say, by Tapner's presence. He visited the dead man's cell, followed his course to the place of execution, moralised on the view to be seen from the spot, hunted up and examined the gibbet in an out-house where it had been deposited, purchased for three francs a posthumous cast of the deceased's head, and finally discovered the place of interment, and gathered a bunch of grass from the grave. After this, I think Victor Hugo is a little hard upon the inhabitants of Guernsey for their eagerness to possess small pieces of the rope as relics.

But if the description of this pilgrimage, in the author's "*Choses Vues*," rings a little false, it would be unjust not to recognise that the passionate zeal with which he strove to give effect to his convictions respecting the abolition of capital punishment were worthy of all praise. The cause was dear to his heart, and to the hearts of his sons. One of the latter suffered imprisonment for it in 1851. He himself gave it time and energy without stint—was instant in its advocacy, in season and out of season. Never did he omit an opportunity of urging with tongue and pen that the existing laws should be changed ;—never did he forbear to plead for the life of any one condemned to death whose case came under his notice. From John Brown, the martyr of negro emancipation, down to wretches like Tapner, the large mantle of his clemency would have been thrown

over all without distinction. And that his zeal to save even the most criminal life came of a strong humanity, there can be no doubt.

But all this has led us a little away from the series of his earlier novels—which is our immediate subject. The “*Dernier Jour*” was published in 1829. In February to June, 1830, came the battle of “*Hernani*.” In July, 1830, the monarchy of the elder branch of the Bourbons passed away, and Louis Philippe was made King of the French. And in the autumn and winter of the same year, Victor Hugo was hard at work on a novel of greater scale than he had yet attempted. He had, some little time before, incautiously entered into an engagement with a publisher to write the book by a given time. That time had passed. Something had angered the publisher. Law proceedings were threatened. Haste was imperative. The poet, as Madame Hugo tells us, “purchased a bottle of ink, and a great grey knitted woollen wrapper that covered him from his neck to his toes; locked up all his clothing so that he might have no temptation to go out; and entered into his novel as if it had been a prison. . . . Thenceforward he never left his desk save to eat and sleep. His only relaxation was an hour’s after-dinner chat with a few friends, to whom he sometimes read the pages written during the day.” “He had been,” Madame Hugo adds, “very melancholy” when his incarceration began. But “with the first few chapters, his melancholy departed; his creation seized hold of him; he felt neither weariness nor the winter’s cold; in December he worked with his windows open.” And well might an inner fire of enthu-

siasm give heat to that almost monastic seclusion of five months' duration. The poet-novelist was at work upon a master-piece. On the 13th of February, 1831, appeared "*Nôtre Dame de Paris.*"

A great book, a magnificent book most unquestionably, a book before which the critic may fitly throw down all his small artillery of carpings and quibblings, and stand disarmed and reverent. That Victor Hugo had realised his ambition of crowning with poetry the prose of Sir Walter Scott, I shall not affirm. But then it scarcely seems as if any such crowning were needed, or possible; for the good Sir Walter's faults lay neither in lack of imagination, nor lack of fervour, nor an absence of elevation of tone, nor, in short, in a deficiency of aught that goes to the making of poetry. "*Quentin Durward*" deals with the same period as "*Nôtre Dame de Paris.*" and if one places the two books side by side in one's thoughts, such differences as there are will hardly seem to be differences in degree of poetical inspiration. Our own great novelist's work is fresher, healthier perhaps, more of the open air. A spirit of hopefulness and youth and high courage seems to circulate through his pages—a sort of pervading trust that the good things of this world come to those who deserve them, that merit has its prizes, and unworthiness its punishments. There is blood enough and to spare in the book, and a good deal of hanging and much villainy. But our feelings are not greatly harrowed thereby. We need not weep unless so minded. If a good tall fellow is lopped down here and there,—like the worthy Gascon whom Dunois strikes through the unvisored face—the tragedy comes before

we have known the man long enough to grow greatly interested in him. We are only affected as by the death of a very casual acquaintance.¹ And such sufferers as the Wild Boar of the Ardennes deserve their fate too thoroughly to cause us the most passing pang. So does Scott, in his genial kindness, temper for us the horrors of the Middle Ages. He does not blink them, as M. Taine erroneously seems to hold. He presents them, with consummate art, so that they shall not cause unnecessary pain. Victor Hugo, in "*Nôtre Dame*," was animated by a quite other spirit. After the manner of his nation—for French fiction tolerates an amount of unmerited misery to which the English reader would never submit—he looks upon life far more gloomily. Claude Frollo may perhaps deserve even the appalling agony of those eternal moments during which he hangs suspended from the leaden gutter at the top of the tower of *Nôtre Dame*, and has a hideous foretaste of his imminent death. Quasimodo is at best but an animal with a turn for bell-ringing, and, apart from his deformity and deafness, not entitled to much sympathy. But Esmeralda, poor Esmeralda, who through the deep mire of her surroundings has kept a soul so maidenly and pure, who is full of tender pity for all suffering, and possesses a heart that beats with such true woman's love—what had she done that Victor Hugo should bestow the treasure of that love upon the worthless archer-coxcomb, Phœbus de Chateaupers, that he should make her frail harmless pretty life, a life of torture, and cause her to die literally in the hangman's grasp? Was it worth while that

¹ The murder of the Bishop of Liège is, I admit, an exception.

Esmeralda's mother, Paquerette la Chantefleurie, should find her child again, after long years of anguish, only to relinquish her, after one brief moment of rapture, for that terrible end? Quentin's courage and practical sagacity are crowned with success: he saves the woman he loves. But by what irony of fate does it happen that Quasimodo's heroic efforts to defend Esmeralda have for only result to injure those who are trying to save her, and the hastening of her doom?

Gloom, gloom, a horror of darkness and evil deeds, of human ineptitude and wrong, such is the background of "*Nôtre Dame*." If Scott gives us a poetry of sunshine and high emprise, Victor Hugo gives us, and here with a more than equal puissance, the poetry of cloud-wrack and ungovernable passion. There is no piece of character-painting in "*Quentin Durward*" that, for tragic lurid power and insight, can be placed beside the portrait of Claude Frollo.¹ Lucid and animated as are such scenes as the sacking of the bishop's palace, and the attack on Liège, they are not executed with such striking effects of light and shade as the companion scene in "*Nôtre Dame*," the attack of the beggars on the cathedral. Scott's landscape is bright, pleasant, the reflection of a world seen by a healthy imagination and clear in the sunlight of a particularly sane nature. Victor Hugo's world in "*Nôtre Dame*" is as a world seen in fever-vision, or suddenly illumined by great flashes of lightning. The mediæval city is before us

¹ Brian de Bois Guilbert is the corresponding character in Scott, —a character equally passionate, but not, I think, analysed so powerfully.

in all its picturesque huddle of irregular buildings. We are in it ; we see it : the narrow streets with their glooms and gleams, their Rembrandt effects of shadow and light ; the quaint overhanging houses each of which seems to have a face of its own ; the churches and convents flinging up to the sky their towers and spires ; and high above all, the city's very soul, the majestic cathedral. And what a motley medley of human creatures throng the place ! Here is the great guild of beggar-thieves even more tatterdemalion and shamelessly grotesque than when Callot painted them for us two centuries later. Here is Gringoire, the out-at-elbows unsuccessful rhymer of the time. Anon Esmeralda passes accompanied by her goat. She lays down her little mat, and dances lightly, gracefully to her tambourine. See how the gossips whisper of witchcraft as the goat plays its pretty tricks. And who is that grave priest, lean from the long vigils of study, who stands watching the girl's every motion with an eye of sombre flame ? Close behind, in attendance on the priest, is a figure scarcely human, deformed, hideous, having but one Cyclops eye—also fastened on the girl. Among the bystanders may be seen the priest's brother, Jehan, the Paris student of the town-sparrow type that has existed from the days of Villon even until now. Before the dancer has collected her spare harvest of small coins, a soldier troop rides roughly by, hustling the crowd, and in the captain the poor child recognises the man who has saved her from violence some days before—the man to whom, alas, she has given her heart. In such a group as this what elements of tragedy lie

lurking and ready to out-leap? That priest in his guilty passion will foreswear his priestly vows, stab the soldier, and, failing to compass his guilty ends, give over the poor child-dancer to torture and death. The deformed Cyclops, seeing the priest's fiendish laughter as they both stand on the top of *Nôtre Dame* tower, watching the girl's execution, will guess that *he* is the cause of her doom, and hurl him over the parapet. And the student too will be entangled in the tragic chains by which these human creatures are bound together. His shattered carcase will lie hanging from one of the sculptured ornaments on the front of the Cathedral.

Living, living,—yes, the book is unmistakably palpitatingly alive. It does not live, perhaps, with the life of prose and every-day experience. But it lives the better life of imagination. The novelist, by force of genius, compels our acceptance of the world he has created. Esmeralda, like Oliver Twist, and even more than Oliver Twist, is an improbable, almost impossible being. No one, we conceive, writing nowadays, with Darwinism in the air, would venture to disregard the laws of inherited tendency so far as to evoke such a character from the cloud-land of fancy. If he did, Mr. Francis Galton would laugh him to scorn. The girl's mother—one does not want to press heavily upon the poor creature, and it must therefore suffice to say that she was far from being a model to her sex. The father was anybody you like. From such parentage of vice and chance what superior virtue was to be expected? And, failing birth-gifts, had there been anything in education or surroundings to account for so

dainty a product? Far from it. The girl from her infancy had been dragged through the ditches that lie along the broad highway of life, and is dwelling, when we came across her, in one of the foulest dens of the foul old city. She is almost as impossible as Eugène Sue's *Fleur de Marie* in the "Mysteries of Paris." And yet, impossible as she may be, we still believe in her. She is a real person in a real world. That Paris of gloom and gleam may never have existed in history exactly as Victor Hugo paints it for us. It exists for all time notwithstanding. And Claude Frollo exists too, and Jehan, and Gringoire, and Coppenole, the jolly Flemish burgher, and Phœbus, and the beggars,—all the personages of this old-world drama. I should myself as soon think of doubting the truth of the pitiful story told by Damoiselle Mahiette, of how poor Paquerette loved and lost her little child, as I should think of doubting that Portia did, in actual fact, visit Venice, disguised as a learned judge from Padua, and, after escaping her husband's recognition, confound Shylock by her superior interpretation of the law.

In the "Orientales" and "Hernani," Victor Hugo had shown himself a magnificent artist in verse. In "Nôtre Dame de Paris," he showed himself a magnificent artist in prose. The writing throughout is superb. Scene after scene is depicted with a graphic force of language, a power, as it were, of concentrating and flashing light, that are beyond praise. Some of the word-pictures are indelibly bitten into the memory as when an etcher has bitten into copper with his acid. Henceforward there could be no question as to the place which the author

of the three works just named was entitled to take in the world of literature. Byron was dead, and Scott dying. Chateaubriand had ceased to be a living producing force. Goethe's long day of life was drawing to its serene close. Failing these, Victor Hugo stepped into the first place in European literature, and that place he occupied till his death.*

And what light did Olympian Goethe, the star that was setting, throw upon "*Nôtre Dame de Paris*"? A light not altogether benignant, nor, if one may venture to say so in all humility and reverence, altogether just.

"Victor Hugo has a fine talent," he said in one of his conversations with Eckermann, "but he is imbued with the disastrous romantic tendencies of his time. This is why he is led astray, and places beside what is beautiful that which is most unbearable and hideous. I have been reading '*Nôtre Dame de Paris*' these last few days, and it required no small dose of patience to endure the torments which that perusal cost me. It is the most detestable book ever written. . . . What shall we think of a time that not only produces such books, but enjoys them?"

Whereupon one sighs to think that even the gods sitting on Olympus are in some slight sort subject to the infirmities of age, and lose the power of looking with an equally large equity upon the present and future, as well as upon the past.

* I am not here, of course, arguing any question as to the relative greatness of Byron as compared with Wordsworth or Coleridge, who were then still alive. But neither Wordsworth nor Coleridge had, like Byron, a European name.

CHAPTER VII.

WITH the year 1831, and the publication of “*Nôtre Dame de Paris*,” we have reached, as it were, a high tableland in the career of Victor Hugo. He has achieved the most honourable, one may even say the most splendid distinction. He possesses a band of enthusiastic admirers and disciples. If his fame is still contested, it is with such clamour as in itself implies homage, for none but the very great excite in their opponents that kind of anger. He is happy in his children, Léopoldine, Charles, François Victor. He is still young, moreover, not yet thirty, in the first full flower of his manhood. As we scan the portrait, somewhat idealized, perhaps, that Théophile Gautier has left of him at this time, we certainly see a man well dowered with life’s best gifts.

“ What most struck one at first sight in Victor Hugo was a truly monumental brow that rose like a white marble entablature over his quietly earnest face. . . . The beauty and vastness of that forehead were in truth well-nigh superhuman. It seemed to afford room for the greatest thoughts. Crowns of gold or laurel would fitly have found a place there, as on the brow of a Cæsar or a god. . . . It was set in a frame of light, long, auburn hair. But though the hair was somewhat long, the poet wore neither beard, moustachios, whiskers, nor imperial, the face being most carefully shaven, and of a particular kind of paleness, burnt through, as it

were, and illumined by two eyes of bronze-gold, like the eyes of an eagle. The drawing of the mouth was firm and decided, with lips curved and bent down at the corners, lips that, when parted by a smile, displayed teeth of dazzling whiteness. His dress consisted of a black frock coat, grey trousers, a little turned-down collar,—a ‘get-up’ of absolute respectability and correctness. No one would have suspected that this perfect gentleman could be the chief of those bearded and dishevelled hordes who were the terror of the smooth-chinned citizen. Such Victor Hugo appeared to us when first we met ; and the image has never faded from our memory. We cherish with pious care that portrait of him as he was, young, handsome, smiling, radiant with genius, and shedding round him a sort of phosphorescence of glory.”

Surely the man of whom such a portrait could at all truthfully be drawn ought not to have found the waters of life bitter. Surely he can have had no quarrel with fate. And yet, by a strange irony, the volume of poems which Victor Hugo published in the latter part of this same year, 1831, bears the sad-sounding title of “*Feuilles d’Automne*” (“Autumn Leaves”), and is, in its pervading tone, melancholy with the rustle of dead hopes. Yes, even at thirty, youth and so many of its illusions had flown—even to this pre-eminently successful man success seemed to mean so little. So he sings of his sorrows in delightful verse, sings of the child that he had once been, and in whose presence the man that he now is “almost blushes”—sings of that child’s earliest memories, his mother’s love, his boyish aspirations, his glimpses of the great Napoleon—sings a dirge over the “best time of life flown without hope of return.” And mingled with all this “pathetic minor,” come some few love-verses—for what poet, however tearful, ever forbore for any long time to sound love’s tremulous string? and verses also

that seem set to the music of children's voices and laughter. Here the poet was striking a congenial chord, and with a master's hand. What child-poetry will compare with his? As in the days of old, "out of the strong came forth sweetness," so from this poet of storm and battle, this cloud-compeller, whose words often boom and reverberate like thunder, so from him, when childhood was his theme, have come some of the gentlest, most graceful, most delicate, most tender of human words. He never seems to think of the little folk without a mental caress. His thought smiles to them. His fancy seems to make itself a child in their company. His sympathies are keenly wrung by their sorrows. "*Le livre des Mères*"¹ (the "*Mother's book*"), such has been the title given to a selection from his poems on childhood and infancy, and no title could be more appropriate. Throughout his life, in his extreme age as in his early manhood, he loved the little ones with almost a mother's heart.

If one comes to ask why at this particular moment in Victor Hugo's career, and even for some time afterwards, the prevailing tone in his verse should have been a tone of sadness and disenchantment, the reply can only be given vaguely, and as a matter of guess work. There may have been nothing more in the feeling which here finds expression than the melancholy often accompanying the first approach of middle age. Youth's battle is over; success has been achieved, the heights breasted and won; and now, when the ardour of onset has cooled, the result seems poor and unprofitable—the tableland of life, bleak, barren, and cold. Was it

¹ "*Les Enfants, le livre des Mères.*"

worth while storming the ascent for this? Could but youth and its illusions, and the old delight of battle, come back once more! Such, consciously or unconsciously, may have been the state of Victor Hugo's mind at this period. Whether he had other causes of sadness, self-dissatisfaction, or what not, is unrevealed. On this, as on many other questions relating to his real inner life, we are much in the dark. There are few men whose inmost nature it is more difficult to reach. In inaccessibility, as in so many other things, he bears no small resemblance to a king. Even his verse, like the state and pageantry surrounding a monarch, seems in one sense rather to hide than really to reveal him. No doubt the feelings and thoughts to which it gives expression are for the most part genuine. The poet had had such feelings and thoughts. But in showing them to the world, in clothing them in their art dress, they necessarily underwent a transformation into "something rich and strange," or at any rate something not quite the same. What was the real actual Hugo behind them? This it is very far from easy always to discover. Possibly, as time goes on, the publication of his correspondence will throw light on some obscure points. Meanwhile it must remain to some extent a problem, that the man who was afterwards to front with undaunted serenity, exile, old age, the death of those he most loved, should now, amid the full leafage of his June, have faltered and talked of autumn and its falling leaves. In the tremendous trials, public and private, of his later life, he "bated no jot of heart or hope," but "still kept up and steered right onward," thereby giving to mankind

an example of fortitude and high courage. Why do the volumes of verse dated respectively 1831 and 1835 bear titles so suggestive of sadness as "Autumn Leaves," and "Songs of the Twilight"?

Of the succession of plays produced in the middle period of Victor Hugo's career, I have already spoken; nor need I criticise them again here, and linger over the incidents attendant on their production, and the lawsuits to which they gave rise. The only real importance of the latter in the poet's career is the evidence they afforded of his power as an orator, for he spoke in his own defence, and spoke well,—whereof, as Carlyle would have said, might come much.

Of his prose it is necessary to speak at greater length. Considering what a brilliant success he had achieved with "Nôtre Dame," one cannot but wonder, even when all explanations have been given, that he did not almost immediately turn to fiction again, instead of resolutely putting it to one side for thirty long years. His first prose-work after "Nôtre Dame" was entitled "Littérature et Philosophie Mêlées" ("Literature and Philosophy Commingled"), and appeared in the early part of 1834. There is a preface, of course. Victor Hugo, in the good old days, never sent out a book on its embassage without a herald-preface, duly attired in the cloth-of-gold and brocade of rhetoric, to announce its qualities and purpose. So here he explains why he has unearthed from the *Conservateur Littéraire*, which he does not name by-the-by, the articles that had slumbered there since 1819, and placed them in juxtaposition with the jottings of 1830 and various papers of later date,

and, notably, one on Mirabeau, written in 1834. A conscientious desire to study the development of his own mind has been the determinant cause. *That* was the point from which he started. *This* is the point he has reached. And every stage of the progress, as he declares—protesting therein perhaps a little too much—has been presided over by “uprightness, honour, a real conviction, and disinterestedness.” Of the somewhat miscellaneous contents of the book, the paper on Mirabeau is decidedly the finest and most striking. It may be read advantageously with what Carlyle has written on the same subject.

To this same year, 1834, belongs a powerful apologue entitled “*Claude Gueux*,” which appeared in the *Revue de Paris*. It is the story of a workman, not over-idealized but with fine elements in his character, who, acting judiciously according to his lights, kills the governor of the prison in which he is confined. Moralizing whereon, the author proceeds to plead eloquently the cause of the poor and ignorant, the cause of education, and, what seems strange, yet shows the state of Victor Hugo’s opinions at this time, the cause of religion and the gospel. “Sow the villages with the gospel!” he cries. “Let there be a Bible in every hut!” “Jesus had better lore to teach than Voltaire.”

Next in order of publication comes a voluminous work issued in the beginning of 1842,¹ and entitled “*Le Rhin*” (“The Rhine”). It purports to consist of a series of letters written to a friend in Paris, and giving a traveller’s experiences amid the beauties

¹ Greatly added to in later editions.

and picturesquenesses of the glorious old Rhine-land. Here, as in the volume entitled “*Choses Vues*” (“*Things Seen*”), which has appeared within the last few months, the author shows himself, for the most part, without his prophet’s robe, and describes simply what happened simply, and graphically what lent itself to imaginative picturing. On the perfect accuracy of the erudition displayed, I will offer no opinion. I am willing to take it on trust. But no special trustfulness is required to accept for truth the “*Legend of the Handsome Pécopin and the Beautiful Bauldour*,” and their sad separation of a hundred years. “Dull would he be of soul” who refused to accompany the poet into the “*fairy-land forlorn*” of their sorrows, and to follow the superb tramplings and hurryings of Pécopin’s wild ride through the enchanted forest.

Contemporaneously with these volumes of prose, Victor Hugo published three volumes of verse: “*Les Chants du Crépuscule*” (“*Songs of the Twilight*”), issued in 1835; “*Les Voix Intérieures*” (“*Voices Within*”), in 1837; and “*Les Rayons et les Ombres*” (“*The Rays and the Shadows*”), in 1840.

These volumes are full of good things, but how shall I characterize them? How try to photograph into poor prose the evanescences of a great singer’s verse? We have here again memories of the poet’s childhood, of “what took place at the Feuillantines in 1813.” We have recollections of former events in his career, of his interview with Charles X. on the 7th of August, 1829, when the performance of “*Marion de Lorme*” was in question. We have hymns of praise and thanksgiving

over the Revolution of 1830 ; and also, in more than one piece, strains drear and melancholy with the recurring troubles and uncertainties of the time. Napoleon comes in for a good deal of adulation ; for are we not in the days just anterior to the bringing back of the great dead from St. Helena, and his second interment beneath the dome of the Invalides ? And the contrast between the condition of the rich and the poor is vigorously shown. One piece of invective, against the man who had betrayed the Duchesse de Berry, foreshadows the tremendous denunciations of the Second Empire in the “*Châtiments*.” Love poems, too, again we have, and some few songs. And throughout, if the general tone no longer possesses the gladness of youth, yet has it distinctly less of the melancholy of age than in the “*Feuilles d’Automne*.” “*Olympio*”—for under that name the poet seems here to idealize himself—*Olympio* is attacked, mis-said, reviled ; storms gloom, and lightnings flicker and flash round him, as they did of old round the hoar mount whose name he has borrowed ; and in his less prophetic and more human character he visits again the places hallowed by the memories of love, and mourns in memorable verse, as Lamartine had mourned before, as nearly all poets have mourned, over the mutability of things and nature’s impassiveness. But, after all, *Olympio* is not uncomforted. He looks from this lower world to the world which is invisible, and determines to keep his soul’s tranquillity unruffled, as a mountain keeps eternal and unmoved its coronet of snow. At which the reader may perhaps feel a little inclined to smile. But if he does he should balk the wish. For, in point of fact, life’s

storms beat their hardest round Olympio's head, and he did bear it above the clouds to the end. That there was a strong element of theatricality in his nature cannot be denied. Are we not told that Shakespeare himself had killed beeves "with a flourish"? But behind the theatricality was a man, and a great man.

And now he was aspiring to be a member of the Academy, which somewhat fluttered the thirty-nine immortals "seated," as Mr. Browning irreverently puts it, "by gout and glory," in their thirty-nine arm-chairs. Of course, looking at his genius and literary position, he ought to have been elected at once, and without demur. But academies are conservative, and by their very nature seldom march in the van of any literary or artistic movement. So he knocked at the door thrice before he gained admittance; was rejected in 1836 in favour of a M. Dupaty, who has left no great name of any kind; was rejected in 1839 in favour of M. Molé, whose name, or so much of it as remains, is philosophico-political rather than literary; was rejected in 1840 in favour of a scientific M. Flourens; and, finally, was elected in 1841.

Certain persons there were at the time, and Alexandre Dumas and Alphonse Karr were among them, who blamed the poet for wishing to be an Academician; and Mr. Cappon, in his recent clever book on Victor Hugo, echoes the thought, and asks, "if a green border on his vestment, and a *fauteuil*, even in that weighty assembly, could add any real distinction to the author of 'Hernani' and the 'Voix Intérieures'?" Perhaps not; and yet the feeling that here finds utterance seems to me, I confess, somewhat overstrained. Doubtless very great men: Balzac,

André Chénier, Rousseau, Pascal, Molière, Beaumarchais, Dumas himself, have sat in that forty-first arm-chair of which M. Arsène Houssaye has wittily written the history—that imaginary forty-first arm-chair which has been occupied by those who ought to have belonged to the Academy, and yet never found admittance there. But the forty-first arm-chair is one only, and the others are forty, and, strength for strength, the forty are stronger than the one. The French Academy is a body that no writer, however great, can afford to despise. Nor, looking at the matter in a larger, less personal aspect, is it fitting that a writer who is really great, should arrogantly refuse to contribute his share of lustre to a body so linked with all the nation's past. Therefore it seems to me that Madame Hugo's apology for her husband is scarcely needed. He wished to take an active part in politics, she tells us; and to do this a peerage was necessary, and to be eligible for a peerage he must be an Academician. Hence his candidature.

Be it so. But Madame de Girardin, who, under the pseudonym of *Vicomte de Launay*, acted as the chronicler of the time, has left an account of his reception on the 3rd of June, 1841, and tells us that he by no means seemed to regard the ceremony as a thing of naught, and took his position as an Academician very seriously. She tells us, too, how it had been expected that he would, in his speech, riddle with sarcasm his "classical" opponents. But those who anticipated mischief were disappointed. Victor Hugo's address soared out of petty personal regions, dealt largely with Napoleon, whose praise was, for the nonce on everybody's tongue, and

somewhat, generally, with the high mission of the thinker and the writer. Nor did the same amenity fail him on the two subsequent occasions when it fell to his lot to speak at the Academy. On the 16th of January, and again on the 27th of February, 1845, he had to reply to the reception speeches of Saint-Marc Girardin and Sainte-Beuve. With neither writer can he have been in any sympathy. Girardin, in his lectures on dramatic art, had spoken of Victor Hugo's works with perfect courtesy,—for when did a discourteous word proceed from those refined and Attic lips?—but still critically and without enthusiasm, and was essentially a classic; while with Sainte-Beuve, Victor Hugo was now on that curious footing of reticent hostility which each maintained towards the other to the end. But, in addressing both, his words were those of entire good taste; and his critical account of Sainte-Beuve's works was more than just; it was generous and kindly.

And did the Academy prove a stepping-stone to the peerage as Victor Hugo had hoped? Most certainly it did. With Louis Philippe he had for some time been on the best terms. His unique literary position more than justified his elevation. There was nothing in his views, as expressed so far, to make it probable that he would be a factious opponent to Guizot's Ministry, by which the King's Government was then conducted, or to the Government itself. And accordingly, on the 13th of April, 1845, he was made a peer. But of his doings in that capacity, and of his politics generally, I purpose to speak in another chapter.

Before doing so, however, it may be as well to say a

few words about the poet's residence in the Place Royale, which he occupied from the autumn of 1832 till nearly the time when the *Coup d'État* drove him from Paris.¹ The house, we are told, I don't know how truly, had long, long years' before been occupied by Marion de Lorme. It has been several times described. I quote M. Barbou's description, rather than M. de Banville's, because, though less poetical, it is perhaps more precise.

"The suite of apartments," he says, "was on the second floor, and approached by a wide and handsome staircase. A door opened into the dining-room, which was adorned with some fine tapestry, representing scenes in the 'Romaunt of the Rose.' . . . The study was a room full of quaint pieces of furniture, and overlooking an inner courtyard. The ceiling was decorated with a painting by Auguste de Châtillon, called *Le Moine Rouge*, 'the red monk,' a strange production, . . . its subject being a priest robed in red, lying at full length, and reading a Bible held up by a nude female figure. . . . The *salon* might almost be described as a picture gallery, so numerous were the artists . . . who had sought the honour of being allowed to contribute to its decoration. At one end was a high mantelpiece, fashioned according to the poet's taste, covered with drapery, and supporting some fine china vases. On the left was a sort of dais . . . on which it has been alleged that Victor Hugo, in his vanity, used to sit on a throne, . . . beneath a canopy, and extend his hand to be kissed by his admirers, who would mount the steps upon their knees. . . . Some arm-chairs of the time of Louis XV., made of gilt wood, and covered with tapestry, completed the furniture of the reception room. . . . Opposite the dais were three large windows reaching to the ground, and opening on to a balcony that ran the whole length of the salon, and overlooked the Square."

The picture is of a luxuriously artistic dwelling, and

¹ The house which he then occupied was in the Rue de la Tour d'Auvergne. It has been described by Théophile Gautier.

reminds us, in some of the details, of the interior decoration of Hauteville House, Guernsey, where the poet's taste in such matters was hereafter to find such full expression. The story of the daïs and canopy, and the semi-religious function connected therewith, we might, I think, at once laugh away, even without M. Barbou's indignant disclaimer. Victor Hugo was, no doubt, inclined to pontificate on public occasions, and, in later years, spoke only too often *urbi et orbi*, to the city of Paris and to the world. But in private life, all evidence goes to prove that he was pleasant, genial, simple, a charming host, and fulfilled with an old-world charm of manner and courtliness. Forster, for instance, tells us with what "infinite courtesy and grace" he received Dickens and himself; and after descanting on the "noble corner house," the "gorgeous tapestries, the painted ceilings, the wonderful carvings, and old golden furniture," goes on to say :

"He was himself, however, the best thing we saw ; and I find it difficult to associate the attitudes and aspect in which the world has lately wondered at him, with the sober grace and self-possessed quiet gravity of that night of twenty-five years ago. Just then Louis Philippe had ennobled him, but the man's nature was written noble. Rather under the middle size, of compact close-buttoned-up figure, with ample dark hair falling loosely over his close-shaven face, I never saw upon features so keenly intellectual such a soft and sweet geniality, and certainly never heard the French language spoken with the picturesque distinctness given to it by Victor Hugo. He talked of his childhood in Spain, and of his father having been governor of the Tagus in Napoleon's wars; spoke warmly of the English people and their literature ; declared his preference for melody and simplicity over the music then fashionable at the Con-

servatoire ;¹ referred kindly to Ponsard,² laughed at the actors who had murdered his (Ponsard's) tragedy at the Odéon, and sympathized with the dramatic venture of Dumas. To Dickens he addressed very charming flattery in the best taste ; and my friend long remembered the enjoyment of that evening."

But all testimony is to the same effect. M. Legouvé, the Academician, having to describe an interview with the great man, says, "he showed himself, on this occasion, what in private life he invariably was, unaffected, amusing, full of anecdote and pleasantry." M. Lesclide, his private secretary in later years, speaks to similar effect, and insists on "the charm of his conversation, which was easy, simple, yet full of colour, and, when he was animated, of an ardent enthusiasm." M. de Banville, who mentions the throne-and-dais story as an invention of the small paragraphists of the press, says he "had indeed other tigers to comb"—a dignified foreign equivalent for "other fish to fry,"—than

"to play at royalty. He was then, as we have ever seen him, affable, full of welcome, thinking of every one, forgetful of himself, and retaining no trace of his aristocratic breeding save an exquisite politeness and familiar courtesy. When in his house, you felt at home, free, happy, at ease, and warmed by a pleasant atmosphere of affection and tenderness. It was hospitality of the real right kind—that which you will find in a king's palace, and a woodcutter's hut."

Nor would it be right to forget the part which Madame Hugo contributed to the charm of this delightful hospitality. M. de Banville not only speaks enthusiastically

¹ Like many great verbal melodists, he had no ear or real liking for music.

² Whom the classical party had set up as his rival.

of her dark beauty, calling her “the Muse of Romanticism,” but also speaks of “the sovereign grace” with which she “did the honours” of her salon, and helped to make it a place where “all the men of that time who had achieved fame” delighted to congregate.

CHAPTER VIII.

THE Revolution of July, 1830, which drove Charles X. from the throne of France, was a mistake, but an excusable mistake. The Revolution of February, 1848, which cut short the reign of Louis Philippe, was a mistake without an excuse. No doubt the Citizen King's government had committed errors, as what government has not? The suffrage was too restricted, the number of place-men in Parliament excessive. And that Guizot, the minister who in himself personified the policy of the last years of the reign, thought overmuch of the opinion of the Chambers, and over little of the opinion of the country, cannot be denied. But such reasons, however valid for the overturning of a ministry, were certainly not adequate reasons for upsetting a government, and casting a great nation adrift to the chances of revolution, anarchy, and imperialism.

Nor does it seem that at the time Victor Hugo would have repudiated this view. In order, however, to understand the part he took in politics during the stormy days from 1848 to 1851, it is necessary to go back, and to follow the course of his opinions from an earlier date.

Long years before, when he and the Government of the Restoration were young together, he had been an ardent royalist. His royalism, no doubt, cooled a good deal before the great three days of July, 1830, which sent Charles X. into exile; but still there is no strong evidence anywhere, that up to that time he went very fiercely into opposition. Madame Hugo makes much of the "Ode à la Colonne" (the "Ode to the Column"), published in 1827, under the following circumstances. The Austrian ambassador had asked a certain number of French marshals to an entertainment;—they came, and were announced with their names shorn of the titles won in battle against the Austrian arms. Whereupon they withdrew. And Victor Hugo, a few days afterwards, published his fine ode, all quivering with patriotic indignation. But such an act need not at all necessarily have been an act of declared opposition. M. Biré shows almost conclusively that it was not; and that the king, on this occasion, shared the sentiments of the poet. The fact is, that with the death of Napoleon, imperialism had ceased for a time to be a practical factor in French politics, and that Victor Hugo might declare himself, in sonorous verse, to be the Memnon tuneful in the rays of the Imperial sun, without greatly hurting anybody's susceptibilities. The admiration was felt to be poetical only. When, therefore, he claimed in the preface to "Marion de Lorme," dated August, 1831, to have "been for many years in the most laborious, if not the most illustrious, ranks of the opposition," he seems clearly to have been deceiving himself. His royalism had certainly undergone a change

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lution of February, 1848, broke suddenly upon con-
nial monarchy in France.

it came on him, at first, as a blow, seems un-
able ;—and all honour to the feeling, the blow
ow to France. On the 24th of February, the
y abdicated rather than cause any effusion of
the widowed Duchess of Orleans, with her
the Comte de Paris and the Duc de
to the Chambers to see if it were yet pos-
e crown for the elder. It was a brave,
dient, and might perchance have been
the woman's sorrows and gallant bear-
embly, had not Lamartine, the poet,
f his popularity and eloquence into
ctor Hugo at that time favoured
Duchess as Regent, and vainly
in the Place de la Bastille.
t the monarchy was gone,
as to his future political
he was put forward as
“Assemblée Consti-
gether for the purpose
is name only came out
martine's being first,—and
the 4th of June, however, a
ved more propitious. 86,965
favour, and he entered the
cted with him was Louis
v unattached prince in

the attitude he was to hold in the Assembly. There were two republics in possibility, he declared—one that would run up the red flag, erect a statue to Marat, make half-pence out of Napoleon's column, abolish property, destroy family ties, parade guillotined heads on the top of pikes,—and, in short, exhibit the ghastly phantasmagoria of 1793, which Victor Hugo was afterwards to regard with so much complacency. The other republic, on the contrary, was really to be a very respectable and quiet affair, and to inaugurate a reign of peace, plenty, and brotherhood. It will thus be seen that the poet at this time spake the words of sobriety and wisdom. His sympathy for the poorer classes was, as it had always been, ardent and openly expressed. But he would have nothing to say to national workshops and other quack remedies for their troubles. No doubt he had crotchetts of his own, such as the abolition of capital punishment ; but they were harmless and even beneficent crotchetts when compared with the wild theories thrown hither and thither like Greek fire in that assembly of all the eccentricities. At no period of his subsequent life did he show the same sanity and equipoise of political judgment, as when sitting in the Constituent Assembly as a conservative republican.

A very short experience served to sicken France of the democratic government inaugurated in February, 1848. The constitution—a thoroughly bad one—framed by the Constituent Assembly, provided for the election of a president by universal suffrage. That election took place on the 10th of December, with this result—that Lamartine, who had started in the previous February with

unbounded popularity, and had really rendered great services to France, was nowhere ; that General Cavaignac, who represented moderate republicanism, only secured 1,448,107 votes, and that Louis Napoleon headed the poll with 5,434,226 votes.

And what did Louis Napoleon represent? Personally he represented a past that was simply ridiculous—a farcical landing at Boulogne with a tame eagle, a temporary imprisonment in a bathing machine, a hopelessly abortive attempt at Strasburg to incite a regiment to mutiny. But, of course, his name represented something essentially different, it represented a past to which Frenchmen of nearly all shades looked back as one of glory—a past in which revolutionary passion had been curbed by a strong, firm hand. And then that name had been so superbly advertised! Think how the Napoleonic legend had been preached to the people, and by what effectual tongues. Béranger, the most popular poet of his day, had given it a voice through the length and breadth of the land. Thiers had devoted to its proclamation the beautiful lucidity of his prose. Victor Hugo had sung it again and yet again in impassioned verse. Not nine years before, the body of the great emperor had been borne through the streets of Paris, with all outward signs of a nation's mourning, and the country had re-echoed with the dead man's fame. And now, when the time was ripe, the nephew appeared transfigured by the uncle's glory. Every one, the most illiterate voter, knew Louis Napoleon's name ; and in such a case to be known is everything. He was simply by far the best advertised among the candidates.

Victor Hugo has described, in the opening of his scathing book, “Napoléon le Petit” (“Napoleon the Little”), how in the gathering darkness of a winter afternoon, on the 20th of December, 1848, Louis Napoleon ascended the tribune of the Assembly, and swore in “the presence of God, and before the French people, to remain faithful to the democratic Republic one and indivisible, and to fulfil all the duties imposed on him by the Constitution.”

To what extent did the Prince President mean to keep that oath? Who shall tell? The man was a mystic, a visionary, a fatalist, and in his strangely compounded intellect had probably a kind of belief in some personal mission of his own that absolved him from the petty trammels of honour. That the “democratic Republic” was in evil case even at that time is clear; and also that the “Constitution” was pretty nearly unworkable anyhow, and absolutely unworkable when subjected to the strain and jars of disloyalty. Victor Hugo, in his polemics, lays all the blame for subsequent events on Louis Napoleon’s turpitude, on his intrigues for the consolidation of his own power, his constant attempts to discredit parliamentary government, his settled determination by all means to reach the Empire. But there is, of course, a different side to all this. If the advanced radical party, to which Victor Hugo was so soon to belong, had not thoroughly frightened France, imperialism would have been impossible. The wild talk of the revolutionists, frothy with the froth of blood, the horrors of the insurrection of June, 1848, the martyrdom of the Archbishop of Paris, shot down as he strove to put an end to a fratricidal war—such were the arguments that told so heavily in

Louis Napoleon's favour. He was borne to his evil goal by the faults of his enemies. Of course he took advantage of their faults. It was by playing on the fears which they excited that he secured the co-operation of statesmen of the highest character and intellect, who would, in calmer times, have been the first to oppose his designs.

Meanwhile, what part was Victor Hugo taking in public affairs? At first he favoured Louis Napoleon. They had both been elected to the Constituent Assembly at the same time, and when the question was debated whether the Prince, then still in London, should be admitted into France to take his seat, Victor Hugo voted in his favour. He also supported his candidature for the Presidency. At the same time, he was speaking and voting as a conservative republican, and on the 29th of January, 1849, we find him opposing the radical party who objected to the dissolution of the Assembly.

But in May, when the dissolution took place, and a new Assembly, the Assemblée Législative—far more conservative than the old—came into existence, Victor Hugo's attitude changed altogether. He had again been elected by the City of Paris, and now took up openly the position of extreme radicalism from which he never afterwards retreated. What had led to this change of front? We are not able to answer the question with any degree of precision. Victor Hugo himself, in one of his pompous later prefaces, tells us that—

“After June, 1849, the lightning flash that leaps out of events entered into the author's mind. That kind of flash is indelible. A flash of lightning that remains permanent—such is the light of truth in the human conscience. In 1849 that light shone definitely for

him. When he saw Rome trodden down in the name of France ; when he saw the majority, hypocritical so far, suddenly throw away the mask behind which it had, on the 4th of May, 1848, cried seventeen times, ‘ Long live the Republic ! ’ when he saw, after the 13th of June, the triumph of all the coalitions hostile to progress ; when he saw that cynical joy, sadness filled his heart ; he understood ; and at the moment when the hands of the conquerors were held out to draw him into their ranks, he felt in the bottom of his soul that he too was one of the conquered. A corpse lay on the ground, and all cried, ‘ Lo, the Republic lies there ! ’ He went and looked at that corpse, and recognized that her name was Liberty. Then he stooped towards her, and took the dead to his bosom as his wife. Before him, as he looked into the future, were overthrow, defeat, ruin, insult, exile, and he said, ‘ It is well ! ’ ”

Not, perhaps, without a certain kind of eloquence all this, but decidedly a little vague ; and as the poet does not appear, even at the time, to have condescended to more detailed explanation, one can scarcely wonder that the change in his opinions was regarded with suspicion. As he afterwards said, very characteristically, “ I was accused of apostasy when I thought myself an apostle.” Veuillot, the acrid Roman Catholic journalist, writing, as usual, with a pen dipped in gall, simply accounted for his conversion by saying that he felt altogether outrivaled among the orators of the more Conservative ranks, and saw that his only chance of securing personal preeminence was among the Radicals. Montalembert, the eloquent Liberal Catholic, in one of their many word-duels, openly cast at the poet a rankling accusation of “ having flattered and then denied every cause.”

The party polemics of the day one may rightly set to one side. Victor Hugo’s attitude during the years 1849, 1850, and 1851 is entirely to be commended in so far

as it was attributable to a clear foresight on his part that Louis Napoleon aimed at a personal despotism. Where he seems to have gone wrong was in thinking that the imperialist designs could best be frustrated by ultra-radical means. By openly allying himself, therefore, to a party whose violence of act and speech formed the future Emperor's stock-in-trade, he simply played into the enemy's hands. That he should speak well and eloquently in his new cause was almost a matter of course. Together with a powerful voice, audible even amid the storms of a popular Assembly, Victor Hugo had all the other parts of an orator—perfect self-possession and confidence, a command of ready and striking language—and language not too delicate in its effects for the speaker's art—and an inborn feeling for form. His passion moved, and his sarcasm went barbed to its mark. That his speeches contained some verbal glitter is undoubtedly true. They seem to crackle every here and there, as one may say, with the tinsel of antithesis. But of their telling brilliancy there can be no question. Whether they are a statesman's speeches is a different matter. Let us take an instance. We have reached the 17th of July, 1851, and a great question is being debated in the Assembly. According to the constitution, Louis Napoleon's tenure of office will expire in 1852; but a revision of the constitution has been proposed. Failing such revision, the Prince President must retire into private life. Will he do so? And, if not, what means will he adopt to remain in power? Now, if ever, it seems desirable to use moderation for the purpose of conjuring the advancing peril, and showing that the

republican party is not really a portent and a bugbear, but capable of right reason and good government. Yet this is the occasion which Victor Hugo selects for an harangue, eloquent indeed, but calculated to give a tongue to every worst accusation brought against the extreme radicals, and to alienate altogether those on whose help the republicans might have counted in any future struggle against the President. He glorifies the Revolution of 1793 as the “era foreseen by Socrates, and for which he drank the hemlock ; as the work wrought by Jesus Christ, and for which he was nailed to the cross.” He declares the Republic and the Revolution to be indissolubly bound together. He mingles, for common insult and execration, all kinds of monarchy, constitutional as well as unconstitutional. He proposes, as a practical measure, that all judges should be elected by universal suffrage, and the greater political questions decided by direct appeal to the same tribunal. He speaks glibly of the “United States of Europe,”¹ and heralds the “august proclamation of the Rights of Man.” In short, he makes a vivacious and telling speech, and plays the game of the ambitious Prince President most effectually. It was speeches of this kind that helped to make the *Coup d'État* possible, and gave Louis Napoleon his immense popular majorities.

But here, amid all this storm of politics, these lightnings of vivid speech and thunderings of revolution, we may fittingly pause once more for the purpose of getting a glimpse of the poet among his family and friends. The

¹ “Really, this is going too far,” cried Montalembert when the orator had reached this point, “Hugo is crazy !”

place of meeting is not of happy augury. It is none other than the Conciergerie prison, in which his two sons, and Paul Meurice and Auguste Vacquerie—the whole staff of the *Événement*,¹ Victor Hugo's paper—had been confined for various press delinquencies. But what a merry party they are as M. de Banville drops in upon them! There is the poet himself, who has come to spend the day with the prisoners, and Madame Hugo, and their daughter, Adèle. The young men are “handsome, gay,” full of life and spirits, making a jest of their incarceration. The parents are proud to see them in such good heart, and the father caresses their abundant locks. He, too, is “gay, smiling, happy . . . prodigal of winged words, of crystallized sayings, of amusing anecdotes, delightfully familiar, and a thousand times more witty than those who make trade and merchandize of wit.” So does the dismal old place ring with their bright talk and laughter, and the day lightly, quickly pass, and fade into the night.

For now the 2nd of December, 1851, is upon us. The *Coup d'État*, however, belongs rather to the general history of France than to my immediate subject, and I need not tell its full story here. We all of us know how, during the fatal night from the 1st to the 2nd, the leading deputies from whom any organized resistance was to be expected, were arrested and lodged in prison; how, on the following day, a proclamation was published declaring the National Assembly dissolved, and appealing to universal suffrage to ratify the President's acts; how

¹ Started on the 1st of April, 1848, with this motto: “Intense hatred of anarchy; tender love for the people.”

every printing-press in the capital was gagged ; how every attempt at resistance was ruthlessly suppressed ; how, in fine, the hand of an iron despotism seized France in its grasp.

Victor Hugo has himself told us the share which he took in resisting the President's usurpation. The news of what had happened in the night reached him at eight o'clock in the morning. He breakfasted hurriedly, kissed his wife and daughter, and sallied forth to meet the other Republican deputies. The meeting took place, and there was some speaking and determination, and then separation in various directions to see if it were possible to induce the people to rise. But from the first it must have been clear that any very effectual rising was problematic. The Assembly was unpopular with the masses, who remembered besides the punishment they had received during the insurrection of June, 1848, and had little care to try conclusions with the troops again. Moreover Louis Napoleon's appeal to universal suffrage was a skilful move. So the first day wore through in somewhat sterile agitation, and Victor Hugo slept, or rather spent a sleepless night, in the house of a stranger—in a delightful domestic nest which he describes with an artist's feeling for the effectiveness of contrast.

The next morning he visited his own home ; learned that a police-officer had been to the place the day before ; went off in a cab to the classic region of revolt, the Faubourg Saint Antoine ; found that there had already been some fighting ; that the barricade erected mainly by the representatives was taken, and Representative Baudin killed. Here, in view of the entire apathy of the Faubourg,

Victor Hugo acknowledges that he felt the cause of resistance to be well-nigh hopeless. Nevertheless he did not surcease from his efforts. There were more meetings, more harangings of the people, more endeavours to issue proclamations, though the difficulty of getting anything printed was almost insuperable, and another flying visit to his home. Then, after an evening all lurid with battle and the coming storm, he found refuge for the night once more in a friend's house.

The third day, further proclamations ; and also, which is more perhaps to the purpose, greater signs of a popular rising—barricades in every direction, which Victor Hugo visits,—and a great deal of firing. The hearts of the insurgents are elate ; and Victor Hugo is even considering whether it may not be desirable to spare the life of Louis Napoleon when taken, and so help on the cause of the abolition of capital punishment. But at this moment the troops, who have hitherto been acting more or less fitfully, put forth their whole power. The boulevards are swept with grape. Volleys of musketry are fired in every direction. The people in the streets are bayoneted and sabred down.

This, according to Victor Hugo's constant contention, was mere murder, a cowardly massacre of non-combatants, having for its only object intimidation. And even M. de Maupas, the Prefect of Police at the time, and one of the four chief agents in the *Coup d'État*, seems to admit that the President's military adviser, Saint Arnaud, had purposely allowed the insurrection to gather head so as to quell it more effectually and for ever. If this were really Saint Arnaud's object, he succeeded most entirely. Paris

was thoroughly cowed. There were, during the same evening and night of December 4th, further barricades defended and taken, further deeds of violence. But the fight was virtually spluttering out. Victor Hugo fled from place to place, striving in vain to kindle the dying embers, seeing on his way many a scene of blood and sorrow, to be thereafter chronicled in his "*Histoire d'un Crime*," or to find a place in his poetry and fiction. But the game was played out and irretrievably lost. From the 5th he was a mere fugitive, flitting hither and thither, and lurking in one hiding-place after another. Madame Drouet's devotion here stood him in good stead ; and on December 14th, by means of a false passport and a disguise, he succeeded in reaching Brussels.^x

^x M. de Maupas says the Government could easily have laid hands upon him if it had wished to do so ; and this seems quite probable.

CHAPTER IX.

A Son who has suffered shipwreck upon the stormy waters of life and bravely struggles to the shore, so did Victor Hugo reach Brussels on December 14, 1851. The cause for which he had fought lay in ruins; the party to which he belonged was hopelessly beaten and dispersed; his private fortune, the result, as he tells us, of his own toil, was greatly impaired. Yet not for a moment did he bate heart or hope. "Never once," his son says, "did his best friends, his own family, . . . hear from his lips a single word of discouragement or sadness that might betray the secret emotions caused by so terrible a wrench from all that he held dear." His pen was his sword, and with his pen he determined to attack the master of legions, by whom he had been driven from the soil of France.

Brussels was already full or filling with refugees. They were republicans for the most part, though with a smaller proportion of royalists, and mixed in character as well as politics. Many were men of mark, General Lamorièvre, Émile de Girardin the famous journalist, and others. But Victor Hugo, of course, overtopped them all. In January he had taken up his quarters at No. 27,

in the picturesque beautiful Grande Place, the great square where Counts Egmont and Horn were beheaded when Alva ruled in the Netherlands—the square that witnessed the ball on the night before Waterloo ; and there, in a fairly-large apartment commanding a full view of the Hotel de Ville and its beautiful spire, he received many visitors, and worked assiduously. The visitors would come and go while he was writing. But they never took off his attention ; for at the point of his pen he felt, as it were, his adversary's sword in the great duel between them, and his whole soul was in the combat. At first he intended to open his attack with a history of the *Coup d'État* ; and he states that he actually commenced the “ Histoire d'un Crime ” on December 14th, the very day of his arrival in Brussels. But soon he seems to have felt that the times required something more stirring than a history, however impassioned, some more direct appeal to God and man against the wrong that had been perpetrated. Accordingly, though he completed the “ Histoire d'un Crime ” on May 5th, 1852, he did not publish it then, nor for twenty-five years afterwards. Now, with a pen all quivering with indignation, he was writing one of the most superb pieces of invective in literature, “ Napoléon le Petit.”

I know no other work that is quite like it. Macaulay's article on Barrère is cold by comparison. Even Milton's “ Eikonoklastes ” is not so uniformly at white heat. Almost literally the language seems molten with passion, and rolls in a stream like lava, lurid, scorching, devouring. As the reader is rushed through page after page, the horror of Louis Napoleon's crimes deepens upon him.

What manner of ruler can this have been who solemnly swore his oaths before God and man, and then violated them so cynically? What kind of government was this which he had instituted? What crimes were these, what mire of blood, what infamy of cruel persecution, through which he had crawled his way to power? What eloquence had he quenched in the process? By what abject tools had he been absolved and declared innocent? So, through chapter after chapter, is the reader borne breathless and indignant,—noting every here and again some passage of brilliant rhetoric, like the famous description of Mirabeau as the incarnation of a New World speaking to the Old.

The book burst into that newer world like a bombshell in July, 1852;—and one of the effects of the explosion was to blow Victor Hugo himself out of Belgium. The country was given to hospitality, and not unmindful to entertain strangers and political refugees; and it was a country where the liberty of the press had due recognition. But, for all that, it was a very little country beside a very large country, and to suffer the *de facto* government of France to be outraged, might prove perilous. So, as the existing laws did not provide adequate machinery for causing Victor Hugo to “move on,” a special law was passed to enable the government to get rid of such a dangerous guest. His sons, who had heard the thunder of the *Coup d'État* from behind the prison walls of the Conciergerie, had joined him on their release in January, 1852; and all three together left Antwerp on the 1st of August, and, merely passing through England, landed in Jersey on the 5th.

The house which the Hugo family occupied in the island stands on the low shore, a little way out of St. Helier, and bears the designation of 3, Marine Terrace. It is an ordinary seaside house enough, stuccoed and slate-roofed, with no pretensions or special character, but deriving a slightly French look from its green shutters. Along the back, towards the shore, there is a greenhouse with grapes, and then a little garden with some evergreens, and then a strip planted with tamarisks,—which, as I was told, I know not how truly, had been brought from France, and, with an exile's tenderness, set there by Victor Hugo himself. A sort of sandy ridge hides the sea from the lower rooms. Beyond this ridge stretch the sands, all studded with rocks, and then come the encircling waters—a peaceful, sunny expanse on a fine day, but, with a rising tide and a stormy wind a very devil's caldron of frothing yeast.

The house has as few pretensions internally as externally, and as the autumn began to gather, seemed dreary enough to the exiles. "There is nothing so icy cold as that English whiteness," says Victor Hugo, describing in after years the effect of the whitewashed walls. "The place was like a piece of built methodism." Why then had they chosen to live there? A little by the choosing of chance, and because it happened to be the first dwelling they had found to let. A little, too, as M. Vacquerie tells us in his "Miettes de l'Histoire," because it was near the town, and Mdlle. Hugo's twenty summers craved some amusement. Madame Hugo, who had been ill at the time of the *Coup d'État*, and seems to have so far remained in France, soon joined her husband and

sons. Let us look at the group first through her eyes, and then through the eyes of the poet himself.

“Our life,” she writes to one of her relations, on the 13th of October, “is regular, quiet, and in part devoted to work. The country is superb, and all articles of food are abundant, easily obtained, and a little cheaper than in Paris. The land is pre-eminently that of freedom. Policemen are unknown. Passports are papers of which the meaning is not understood. Everybody comes and goes as suits his particular fancy. . . . The Queen of England is greatly worshipped. . . . I am extremely pleased with Charles. He accepts his new life as a philosopher—wears thick boots and coarse clothing, grows stout, fishes, is followed by a dog which has taken a fancy to him, is in excellent spirits, and thereby gives life to our home. He has begun a book of which three-quarters are finished, but the arrival of M. and his wife have interrupted him. . . . The sojourn here of Toto (François Victor Hugo) has prevented young Charles, whom his father calls the ‘indefatigable idler,’ from continuing to work at his volume. Charles works for twelve hours at a stretch, and then the slightest thing disturbs him. For the rest, he has entirely given up dress and all frivolous spending of money. Exile has been of the greatest benefit to my dear child. . . . It does not suit my daughter so well, nor, indeed, did her moral health require so heroic a remedy. But winter is coming soon, and here people dance a great deal, stupidly, but still they dance. Get Victor (François) to tell you what the dancing routs of Jersey are like.”

Does not this extract introduce us pleasantly, familiarly, to the Hugo family? Does it not bring before us the kind of change which transportation from Paris had produced in their lives? How dull the gaieties of St. Helier seem to these gay young Parisians! How much, as we learn further from M. Asseline, the young men miss the dissipations of the metropolis of pleasure! But they accept the inevitable cheerfully, and put a good face on evil fortune. They work, they ride, they fish,

they fence, they bathe, they take photographs.¹ Charles who had evidently been developing dandy tastes upon the boulevards, now dresses manfully in homespun ; and Miss Adèle will gladly accept the Jersey dances in default of more brilliant assemblies.

Victor Hugo, too, has painted us a picture of his home at this time—a picture as severe and gloomy as a Spagnoletto or Zurbaran — dead earnest every brush-stroke of it :

“ Those who dwelt in this house . . . of melancholy aspect . . . were a group, or let us rather say a family. They were exiles. The eldest was one of those men who, at a given moment, are no longer wanted in their native land. He was leaving a popular assembly the others, who were young, were leaving a prison. To have written aught, is not that a sufficient motive for bolts and bars ? Whither should thought lead if not to a dungeon ?

“ The prison had released them into exile.

“ The eldest, the father, had all his dear ones by his side, with the exception of his eldest daughter, who had been unable to follow him. His son-in-law was with her.²

“ Silent they often leaned over a table, or sat on a bench, grave, musing together, thinking without speech of the two who were away. . . . One morning, at the end of November, two of the inhabitants of this place, the father and the younger of the sons, were sitting in the parlour. They were silent like men after a shipwreck.

“ The rain fell, the wind howled, the house was as it were deafened by the external clamour. Both were sunk in thought, absorbed, perchance, in considering the coincidence of a beginning of winter and a beginning of exile.

“ Suddenly the son lifted up his voice ” [I am translating quite literally], “ and questioned the father :

¹ M. Vacquerie, who was of the party, thus describes their occupations.

² The reference here, I imagine, is to the daughter who was sleeping her long sleep by the waters of the Seine.

“ ‘ What do you think of this exile ?
“ ‘ That it will be long.’
“ ‘ How do you intend to employ it ?
“ ‘ I shall contemplate the ocean.’
“ There was a silence. The father resumed :
“ ‘ And you ?’
“ ‘ I,’ said the son, ‘ I shall translate Shakespeare.’ ”

Fortunately there is evidence that Victor Hugo was not always in this tragic mood during his residence at Marine Terrace ; for on the door of one of the upper rooms are scratched, in his handwriting and with his signature, the words “ *spes*,” “ *pax*”—“ *hope*” and “ *peace*.” And, more fortunately still, he did a great deal during his nineteen years of exile besides contemplating the ocean. He wrought without remission, at prose and verse. And the firstfruits of his toil was a volume of poems, published in 1853. His Muse had been all but silent since she sang of the burial of the great Napoleon in 1840 ; she now put a sterner string to her lyre, and sang of the misdeeds of Napoleon “ the Little.” The title of the new book frankly indicates its character. It is called “ *Les Châtiments*.”

A terrible book, a book of lashing invective and sarcasm, a book well named “ *The Châtisements*,” for in verse after verse one watches as it were the wriggle of the lash—aye, sees the spurt of blood where it falls, and hears the sharp cry of pain. Is such a book justifiable one is tempted to ask ? Is there not something cruel in thus using the pen as a Russian soldier would use a knout ? But here, I think, Victor Hugo must be exonerated. There is no sign throughout his life that he ever

employed his tremendous literary power for the mere purpose of inflicting pain. He could hit out freely enough on occasion, and probably took a certain pleasure—as what pugilist does not?—in the skill and vigour with which he delivered his blows. But he had not simply the mauling of his opponents in view. He really fought for what he had persuaded himself, rightly or wrongly, were causes of momentous importance. The Empress of the French,¹ it is said, had a strong desire to see this very book, and, after reading it, observed, “M. Victor Hugo must hate us very much.” And so he did. He hated the Emperor with a gamekeeper’s hatred of a stoat or a pike, as a noxious thing to which no “law” could justifiably be given.

So in the face of the Empire and its orgies, he evokes the crime on which it had been founded, and the victims it had done to death, or sent to rot in the penal settlement of Cayenne. He takes for the title of each of the books into which the volume is divided, one of the cant expressions used by the supporters of the *Coup d’État*, “Society is saved,” “Order is re-established,” “Religion is glorified,” and flashes upon the words the fierce light of his satire. Poor Louis Napoleon, how sadly he fares in the hands of this angry opponent; what ignominy is heaped upon his head! Did his uncle, the great Napoleon, deserve punishment for arresting the march of Liberty? It might have seemed that that punishment had fallen when he saw the Grand Army melt into an interminable horror of snow during the retreat from Moscow. But not so. The full thunderbolt of God’s

¹ Of the Empress he always spoke with perfect courtesy.

wrath had not yet fallen. Was the punishment consummated amid the wild confusion of defeat at Waterloo? Still not yet. There were worse things in store for the ruined Emperor. Yes, worse things than that; and even worse things than to be chained to the rock of St. Helena. The worst chastisement of all lay in his nephew's guilt and shame. Translate this back in thought from bald prose to such verse as makes of each situation—Moscow, Waterloo, St. Helena—a mighty picture, and you will understand the peculiar kind of lyrical satire that infuses most of this book. Or take another poem, the "*Souvenir de la Nuit du 4*" ("Reminiscence of the Night of the 4th"). It is the account, which Victor Hugo has also written in prose, of an incident he had witnessed on the evening of the 4th of December, when he was hurrying hither and thither in Paris for the purpose of stirring the people to resistance. A child, a boy of seven, had been shot down as he ran across the street. Some one had carried him to the room where he lived with his grandmother—a place quite humble, but decent, and every way respectable. The little corpse lay in the old woman's arms, and she was murmuring over it half-broken words, "to think that he called me grandmama this morning," "only seven years old," "the masters at his school were so pleased with him," "he was all that I had left of his mother." Then they took the child and undressed him. There was a top in the pocket. As they drew off his socks the grandmother started; "Don't hurt him," she cried, and taking the poor, cold feet into her withered hands, she tried to warm them at the hearth. Then she burst into terrible

sobs. Why had they killed her child? What had he done? What government of murderers and brigands was this?

“Mother,” says the poet, taking up his parable,

“Mother, it is clear that when you asked that question you did not understand politics. M. Napoléon—for that, it seems, really is his name—is poor and a prince; he is fond of palaces; it pleases him to have horses, lacqueys, money for his play, his table, his pleasures, and his hunting. At the same time he acts as the saviour of the family, the church, and society; he also desires to have Saint Cloud for residence, where, mid the roses of summer, the prefects and mayors may come and worship him. And that is why it is necessary that old grandmothers with their poor, gray, trembling fingers should sew the shrouds of seven-years old children.”

This is a very fine poem. There is a simplicity and directness about it beyond praise. Almost each line is self-sufficient, pregnant, and decisive, like a line from a dialogue of Euripides.

And here, perhaps, it may be convenient to take a general survey of what Victor Hugo wrote and thought about Louis Napoleon and his government. Of “Napoléon le Petit” I have already spoken, and also of the “Châtiments.” The third book in which he treated of the *Coup d'État*, the “Histoire d'un Crime,” was written in the first six months of 1852, but a good deal “worked upon” afterwards, as I should gather from the style, and not published till 1877. All three books may, for my present purpose, be taken together.

That they are in any sense impartial cannot be affirmed. When Michelet, the historian, was accused of partiality, he boldly accepted the charge, and declared that he was, and should ever remain, partial, strongly partial on the

side of justice and right. Victor Hugo would have rebutted any similar attack with the same reply. Was there anything to be said, he would have asked wonderingly, in favour of Louis Napoleon and his rout? Consequently, if we want to know how it came to pass that imperialism became possible in France, that the country ratified the *Coup d'État* and acclaimed the Empire by such overwhelming majorities, and that men of high character and ability, such as Montalembert, went with the President up to December, 1851, and some few even beyond—if we want information on these and kindred matters, we must look elsewhere. On these points Victor Hugo will not enlighten us. In his view Napoleon and his immediate instruments were malefactors, and all who supported them knaves, cowards, fools.

Such a way of looking at an important historical event is obviously a little wanting in discrimination. Nor can one altogether avoid a feeling of scepticism when noting throughout these books what a dark cloud of infamy hovers over the one party, and what a brilliant light of virtue and glory illuminates the other. Every general on the side of the *Coup d'État* is venal, every soldier drunken, every police-agent shameless. If one of these fautors of crime meets an honest patriot he hangs his head, stammers, and has nothing to say for himself. If insulted, however grossly, he reviles not again. Officers who are about to order wholesale butchery, offer their cheeks to the smiter with a compunction that would be quite edifying, if it did not so obviously spring from the terrors of an evil conscience. But what a change when we come to the other,

the right side! What courage, what ardent patriotism, what disinterestedness, what eloquence, what capacity for saying the right and telling thing exactly at the proper moment! The men of action among these advanced Republicans are heroes, the men of thought or speech geniuses. Here is So-and-so of whom the world never heard very much; he is a "pamphleteer like Courier, and a song-writer like Béranger."

Now, of course, there is exaggeration in all this. The supporters of the *Coup d'État* were not uniformly venal. Many had persuaded themselves that Louis Napoleon's strong hand was needed to save them from the vagaries of Victor Hugo's friends. The opponents of the *Coup d'État* were not uniformly the salt of the earth. They were a mixed body of men like the rest of us—good and evil together. And as to So-and-so, we may be quite sure, without reading a word of his pamphlets or his songs, that he bore no resemblance to either Courier or Béranger. But when one looks beyond the exaggeration, when one tries to get to the real essential history of the *Coup d'État*, then I fear it must be admitted that Victor Hugo's view is not substantially unjust. The *Coup d'État* was an act of illegality. It violated an existing constitution. It could only have been justified by the extreme peril of society. But in December, 1851, no such terrible peril existed. Though the future of France was dark, it was not desperate. The difficulties ahead were not insuperable. And in looking for a solution of these difficulties, Louis Napoleon was guided rather by his own selfish interests than by care for the well-being of France. Therefore the government which he founded was a

government of decay. It had no root in the better aspirations of the country, and could produce no ultimate fruit. In the *Coup d'État* lurked the germs of Sedan. Accordingly history, for all her large tolerance, will refuse to obliterate Victor Hugo's terrible words. Those words will live by their literary power. They will live also, too many of them, by their truth.

But now another *Coup d'État* comes across our way,—yes, in territory subject to her gracious Majesty the Queen, another *Coup d'État*—for so does Charles Hugo designate the events that led to his father's expulsion from Jersey. The reader, however, need be under no alarm. This was a *Coup d'État* without effusion of blood. No barricades were erected in the streets of St. Helier. No volleys of grape and musketry mowed down the peaceful citizens of that bright and busy town. No autocratic English governor determined to suppress the liberties of the island, and march through crime to his nefarious ends. Comparatively speaking, this political event must be regarded as a tame affair.

Divested of a good deal of extraneous matter, its history appears to be somewhat as follows: in 1854-5, the English and French armies were fighting side by side in the Crimea. A close and friendly alliance united the two countries, and mutual civilities took place between their respective rulers. This was naturally gall and wormwood to the French exiles. To them the Emperor appeared simply as a criminal and outlaw; and France, so long as he held sway, ought, in their view, to have been under a kind of international interdict. Accordingly they wrote and spoke very intemperately about the alliance, and with

peculiar and offensive virulence about the Emperor's visit to the Queen, and the Queen's visit to the Emperor. This was, of course, not calculated to please the English public. To be hospitable is one thing, but to be lectured and insulted by one's guests is another. English feeling rose pretty high, as it was sure to do when England's sons were shedding their blood against the same enemy as the sons of France. Nor in such a cause was Jersey likely to be behind the rest of the Empire. The French exiles in the island had always been particularly busy. They were a small active band, living in the kind of agitation that exile fosters, seeing the baleful shadow of the Emperor everywhere, keeping the keenest of noses for a spy, writing apace, issuing a newspaper, *L'Homme* ("Man"), to which they confided the story of their wrongs and hopes—and, in short, looking at everything through the somewhat narrow lens of their own position. Sooner or later a collision between them and the islanders seemed inevitable. On the 10th of October, 1855, *L'Homme* published a letter that had been addressed by three of the London exiles to the Queen. Why had the Queen gone to Paris? the letter asked. She herself was, so the writers were pleased to say, "as honest a woman as it was possible for a queen to be." What did she mean by going to Paris, where she had "put Canrobert in his bath"—a graceful allusion to the Order of the Bath,—"drunk champagne, and kissed Jérôme Bonaparte,"—where she "had sacrificed everything, her dignity as a queen, her scruples as a woman, her pride as an aristocrat, her feelings as an English-woman, her rank, her race, her sex, everything, even to her

shame, . . . even to her honour"? That this letter was in the worst possible taste needs no demonstration. The people of Jersey, who, as Madame Hugo had remarked on first landing in the island, were particularly loyal, and greatly attached to the Queen, took it in very evil part. They were in no mood to appreciate the subtle distinction drawn by Charles Hugo. *L'Homme* had possibly published the letter without endorsing its sentiments; but *L'Homme* had published the letter. That was enough. An indignation meeting was held on the 13th of October, and, amid great enthusiasm, resolved to petition the governor to suppress the paper. Then the mob made an attack on the publishing office; but not a very determined attack, for the besiegers were effectually put to flight by a shower and one policeman. However, the town was in an uproar, the exiles were in peril, and Victor Hugo sent his manuscripts into hiding. Whereupon the governor ordered the editorial staff of *L'Homme* to leave the island. This raised the spirit of the exiles; and Victor Hugo drew up a protest,—in which, after referring, not very relevantly, to the "glove of Castlereagh,"—whom I take to be our old friend Lord Castlereagh,—he went on to declare that Louis Napoleon was very wicked, that the English Government had for ally "the crime-emperor," and that England would shortly become "an annexe of the French Empire." "And now," the protest concluded, "expel us." Whereupon they were expelled. The protest is dated the 17th of October, and on the 31st Victor Hugo and his son François Victor left by the steamer for Guernsey.

To what extent this expulsion was legal according to

the Constitution of Jersey, I do not know. The act was clearly one which the exiles had done their best to provoke, by going counter in a very offensive way to a popular feeling. This, however, does not justify it ; and whether lawful or not, it seems clearly to have been a mistake. *L'Homme* and the exiles were not doing much harm to any one, and might well have been left alone. That the expelled should have regarded this new misfortune as due to the Machiavellian influence of the Emperor, is comprehensible enough. To their fevered fancy the Emperor was ubiquitous ;—did not Victor Hugo himself consider that Lord Palmerston had refused to respite Tapner, the murderer, out of deference to the wishes of that potentate ? But we, who look at these things with the unbiassed eyes of posterity, may rest content with simpler explanations.

CHAPTER X.

WITH the transfer of the poet's home from Jersey to Guernsey, we may, for a time at least, bid farewell to politics, and return to literature. It was while living at Hauteville House, Guernsey, that he published the masterpieces of his later life.

But first a word as to the house itself—a house which will for ever be associated with Victor Hugo, as Abbotsford is associated with Scott, and Rydal Mount with Wordsworth. It stands about half way up a little narrow picturesque ill-paved street that ascends from St. Peter Port to the Haute Ville, and is, externally, as respectable a house as need be, such a house as a well-to-do country solicitor or doctor might inhabit, with a little front yard containing two trees—evergreen oaks if I remember right—and a door standing well in the centre, and two windows on each side of the door. But once within, we bid farewell to the commonplace directly. Victor Hugo was evidently an æsthete “before letters,” an æsthete before the time when old oak, blue china, and tapestry had become fashionable. He must for years have collected these articles with assiduity and excellent discretion. The place is full of them : old oak, tiles, and a tapestried ceiling in the dining-room ; old oak in the billiard- and

smoking-rooms ; old oak in the almost palatial guest-chamber prepared for Garibaldi, and to which Garibaldi never came ; and tapestry pretty well everywhere. Everywhere too, inscriptions in Latin or French, containing, as one may suppose, the quintessential wisdom which the poet-philosopher had distilled from the leaves of the Tree of Life : "The People are now little, but they will be great ;" "Night, death, life ;" "Life itself is an exile." There are portraits too of Victor Hugo,¹ and one of Madame Hugo, painted when she would be about thirty-five, a dark, handsome woman, with fine white arms and shoulders, and a face puissant, though scarcely intellectual, and an almost voluptuous look in the eyes. A few drawings executed by the poet are there also ; for this man of many aptitudes was a busy draughtsman, and with any kind of instrument, and any sort of pigment—ink, sepia, cigar ash, charcoal, mulberry juice, burnt onion, tooth paste,—would draw the vividest, most fantastic pictures, and might unmistakably have been a notable imaginative painter if he had not been the first poet of his time. At the back of the house a garden, fairly large and delightfully situated, tosses into every room the perfume of its flowers.

But all this while we have not penetrated into the temple's inner shrine, not reached the place where the poet's thoughts were moulded into their often perfect form of words. In order to get to this, we must leave the ground floor where are the dining-room and billiard-

¹ Not very satisfactory portraits. Victor Hugo said in later life, "I really was a better looking young fellow than they used to paint me."

rooms ; must pass the drawing-room with its somewhat rococo gilding ; must go higher still, past the Garibaldi chamber on the next floor ; and then up another flight of stairs, and through a short book-shelved corridor, when we shall find ourselves in a curious sort of glass-enclosed place, a place more like a photographer's studio than anything else to which I can compare it ; and there, there in one corner, we shall see a black shelf, a kind of simple standing-desk ;—and at that shelf Victor Hugo wielded his untiring pen.

With such a view ! Through all the glass sides of the place, wherever one looks, there is a very festival of nature's beauty. To the right is the green slope of the hill, gardens and trees, and a fort. Beyond lies the great encircling sea, with the long straight spine of Sark on the horizon. Nearer in are the twin islands of Jethou and Herm, and, dotted here and there, rocks round which the white foam chafes almost constantly. Back towards the shore again, Castle Cornet stands on its rock below us,— and there is the port, and the shipping, and the long low line of the coast trending out at Saint Sampson ; and back again, further along the left, the town rising against the hill, and the red-roofed houses jostling one another at our feet. Well had this eagle spirit chosen his eyrie. One likes to think of him watching the changes of light and shadow that play over this superb expanse of land and sea, and seem to give it almost a voice.

Close to this unique study is the little garret room in which Victor Hugo mostly slept. When I saw it, his father's sword lay on the bed, and there were on the walls two pictures of Victor Hugo himself as he lay dead.

But death was not yet in the winter of 1855-6, when Victor Hugo would be moving into Hauteville House. He was then a hale and hearty middle-aged man of fifty-four or so, with over thirty years more of good work in him ; and life, even life in the saddened garb of exile, must have smiled at him not unpleasantly as he set up his household gods in his new abode, and began to adorn it to his taste. One of his favourite sayings, we are told by M. Asseline, was to the effect that “a little work is a burden, and much work a pleasure.” And if we take this wholesome motto for true, as it indubitably is, he had many a happy hour in that glass study of his. His habits seem to have been very regular. He would rise at six, or shortly after, refresh himself with a sight of nature in her first morning beauty from the sort of balcony that runs round the top of the house, and then write steadily, without interruption, till twelve.

“After this, with his legs a little stiff, for he had acquired the habit of standing as he wrote, and of walking when in the act of composition, he would come slowly down the stairs, the tapestry deadening the sound of his steps, and would lightly shake off his graver thoughts, and give them a holiday for the rest of the day. He was now no longer the poet, the inspired prophet of a few minutes ago ; he was the friend who came to be with his family, the dear kind friend who had always some pleasant word for greeting, and a tender caress for farewell. Ah, admirable great man ! And how can I, when the word work is mentioned, not call to mind the ingenious tender devices by which he beguiled us to follow his example ; for he did not like to see any one idle about him. ‘No day without its line,’ he was wont to say.”

So even Charles, “the indefatigable idler,” who had now reached the age of twenty-nine, having been born

on the 2nd of November, 1826, was won to labour, and wrought at his novels pretty regularly ; while François, who was two years younger, having been born on the 22nd of October, 1828, set himself assiduously to the gigantic task of translating Shakespeare.

The latter was the more serious spirit of the two. "The younger is the austere one," said Victor Hugo in the somewhat grandiloquent account which he gave of his two sons in the introduction to Charles Hugo's "*Hommes de l'Exil* ;"—"he never loses an hour, he entertains a religious respect for time, his habits are at once those of a Parisian and a monk ;" and the young man himself describes his existence at this time as that of a "Benedictine," and speaks of its "salutary monotonousness," and the health, content, and serenity of the household. In their opinions on political, literary, and social matters, the sons were closely in accord with the father. This indeed was counted to them for sin by Veuillot, of the venomous pen, who complained that, however much they might grow in years, they never seemed to put forth any branch or twig that ventured to stray beyond the paternal enclosure. But, after all, their father was Victor Hugo ; and, with such a father, a certain ductility of mind was excusable. Most of us, I think, will consider that there is something beautiful, and one may almost say august, in the sight of these three men so bravely, and with such unity of purpose, doing battle against adverse fortune.

And what was the first jar of honey that came from this busy hive ? A book of poems by Victor Hugo, with a preface dated March, 1856, and "*Les Contemplations*" for title.

The book is divided into two parts, of which the first is called "Formerly," and contains poems either written between the years 1830 and 1843, or relating to these years; while the second is called "To-day," and refers, in the same manner, to the years intervening between 1843 and 1855. And why should the poet thus have taken the year 1843 as marking so distinct an epoch in his life, and separating the present from the past? Because it was in that year that he had lost his elder daughter, Léopoldine. She had been married, on the 15th of February, to Charles Vacquerie, the brother of one of Victor Hugo's staunchest admirers. The marriage was a marriage of love on both sides, and altogether happy. But on the 4th of September death stepped in, and turned the joy of both families into mourning. The Vacquieres lived at Villequier on the Seine. The young couple went out on the day in question for a sail down the river. A sudden wind upset the boat. The young bride seems to have lost her presence of mind, and resisted all her husband's efforts to detach her from the sinking craft. He was an expert swimmer, and would probably have taken her safely to the shore if she had yielded to his efforts. That he might easily have saved himself there seems no question. As it was, both were drowned.^x

Such is the terrible tragedy that gives its tone to much of the second part of the "Contemplations." The father looks back into his daughter's short life—he sees her in her childhood,—"Ah, do you remember the pretty little dress she wore?" He thinks of her as she used to

^x There is a striking account of the accident in Alphonse Karr's "Guêpes" for September, 1843.

dance about his desk as he sat at work, and scribble her formless pictures, her little lispings of art, over his papers, —“and, I don’t know how it happened,” he says, “but my best lines always seemed to spring into life on the parts of the paper that she had touched.” He hears her at her play, too, listens to her pretty child-warblings of pleasure, as in the summer days she flitted here and there beneath his window. Then memory brings back the happy evenings they used to spend together—the book, or story—all that gracious companionship—there is none surely more beautiful—between an intelligent girl and her father. Gone, gone, things of the past, covered one and all by the cere-cloth of death. And with the thought of death come the obstinate questionings, the dark misgivings, that death suggests. Does she know aught in the grave where she lies? Feeling so cold in her narrow bed, does she ask, “has my father forgotten me?” Forgotten? How could that be? Twelve years afterwards, addressing his wife, he can say that no single day has passed on which they have not incensed her name with love and prayer. And in that same twelfth year, being in Guernsey, on All Souls’ Day, the “Day of the Dead,” as the French call it, he turns his accustomed thought to the little churchyard by the Seine, and would so fain go thither once more and carry to the grave his tribute of flowers; failing which—for the bitter waters of exile flow between him and the place—he wafts to his dead child, wherever she may be, the spirit of the book in which her memory is enshrined.

But though Léopoldine Vacquerie occupies so important a place in the “Contemplations,” she by no means fills

the book to the exclusion of other subjects. Victor Hugo's last volume of poems, exclusive of the "Châtiments," was "Les Rayons et Les Ombres," published in 1840; we are now in 1856, and in the years between there is room for many poetic moods. So he gives us here poems of all sorts and kinds, from love poems that for "motive," aye, and fresh lyrical directness, are not unlike those written by Burns in honour of "Bonnie Jean," to poems that are as the "trumpet of a prophecy" of the good things in store when Christ shall have converted Belial, and other equally desirable, if remote, results have been attained. Some poems, too, there are here that may fittingly be called satires, in the old acceptance of the term. In short, essentially a miscellaneous volume of verse, and also, in some sort, a link between the poet's earlier and later manner.

For now we reach a new and admirable development in his genius. With certain minor differences, the volumes extending from the "Feuilles d'Automne" to the "Contemplations" are, if we except the "Châtiments," fairly similar in form and manner. But in the two first volumes of the "Légende des Siècles," the poet gives us something novel, striking, superb. No doubt there were, here and there in Victor Hugo's former works, passages, as notably the description in the "Burgraves" of Barbarossa sleeping his age-long sleep, which, read in the light of the later book, seem presageful of its characteristic beauties. Such passages are, however, rare. They are as the one swallow that does not make a summer. The "Légende des Siècles" came upon us in the autumn of 1859 like a revelation.

Seldom, surely, can poet have chanced upon a subject, or class of subjects, more in harmony with his genius. Not history did Victor Hugo now propose to paint—history with her severe outline, her impartial calm, her attitude of strict equity. What he here took for his model was history's strange shadowy sister, who sometimes looks as if she were history's double, and sometimes takes her place, and sometimes mocks and mimics her, and sometimes, most often, perhaps, while maintaining a certain resemblance, assumes proportions, large, heroic, real yet unreal, and sometimes seems so altogether unlike that it is difficult to trace any relationship at all. Legend was to be his subject; the “Legend of the Ages” was to inspire him for the nonce. Or, to change the image, like a paladin of old venturing forth on some hard quest, he had set himself to conquer and make his own the cloud-land of fancy and imagination that has gathered from the dawn of time round the sober world of fact.

And well was he equipped for the adventure. Only a great poet can leave with impunity the solid ground of nature, and attempt to give reality to the supernatural. As we read the “Ancient Mariner,” it never occurs to us to question any of the incidents of that uncanny voyage. The old man's spell is on us, as it was on the wedding guest. Coleridge utters his words of magic, and the transformation is effected. We see for the time with his eyes. And so, in this wonderful work, Victor Hugo holds each of us, “like” any “seven-years child,” while he unfolds many a marvellous tale. We never think of doubting what lives so fully in his imagination, what

he reproduces so vividly. As well might we doubt the reality of those scorching fires of Hell that had left their mark, as his contemporaries thought, upon the face of Dante ; or of the fearful sights and sounds that beset Christian on his way through the Valley of the Shadow of Death. These things seem natural enough in the world which a great imagination creates. And so here, when Eblis, at work in his laboratory of evil, takes all God's best gifts and transforms them into the locust, and God in turn takes the locust and makes of it a sun, we are not astonished. When the lions to which Daniel has been thrown speak to us their grave thoughts, we listen without surprise. When the archangel shears off the head of the Emperor Ratbert, and wipes his sword upon the wind-vexed evening clouds, our only feeling is one of satisfaction that justice has been done. We follow unhesitatingly Canute the Parricide in his march of horror, when, being dead, he fares forth into the darkness, and takes the snow of the mountain to make him a winding-sheet, and feels its whiteness sullied, drop after drop, by a red rain of blood, and so wanders on for ever, afraid to appear in the light of God's countenance. But here a quotation will help me, for a part of this poem has been excellently rendered by Mr. Garnett :

“Evening came
And hushed the organ in the holy place,
And the priests, issuing from the temple doors,
Left the dead king in peace. Then he arose,
Opened his gloomy eyes, and grasped his sword,
And went forth loftily. The massy walls
Yielded before the phantom, like a mist.

There is a sea where Aarhuus, Altona,
And Elsinore vast domes and shadowy towers
Glass in deep waters. Over this he went
Dark, and still Darkness listened for his foot
Inaudible, itself being but a dream.

Straight to Mount Savo went he, gnawed by time,
And thus, 'O mountain, buffeted of storms,
Give me of thy huge mantle of deep snow
To frame a winding-sheet.' The mountain knew him,
Nor dared refuse, and with his sword Canute
Cut from its flank white snow, enough to make
The garment he desired ; and then he cried,
'Old mountain ! death is dumb ; but tell me thou
The way to God.' More deep each dread ravine
And hideous hollow yawned, and sadly thus
Answered that hoar associate of the clouds :
'Spectre, I know not, I am always here.'

Canute departed, and with head erect,
All white and ghastly in his robe of snow,
Went forth into great silence and great night,
By Iceland and Norway. After him
Gloom swallowed up the universe. He stood
A sovran kingdomless, a lonely ghost
Confronted with Immensity. He saw
The awful Infinite, at whose portal pale
Lightning sinks dying ; Darkness, skeleton
Whose joints are nights, and utter Formlessness
Moving confusedly in the horrible dark,
Inscrutable and blind. No star was there,
Yet something like a haggard gleam ; no sound
But the dull tide of Darkness, and her dumb
And fearful shudder. 'Tis the tomb,' he said :
'God is beyond !' Three steps he took, then cried.
'Twas deathly as the grave, and not a voice
Responded, nor came any breath to sway
The snowy mantle, with unsullied white
Emboldening the spectral wanderer.
Sudden he marked how, like a gloomy star,
A spot grew broad upon his livid robe ;

Slowly it widened, raying darkness forth ;
And Canute proved it with his spectral hands :
It was a drop of blood."

But in the world of legend there are other things besides the supernatural and marvellous. There are things which copy fact so closely as to be almost undistinguishable from it. That Philip II., the "patient writer of the Escurial," as Motley calls him, sat at his desk, day after day, compassing the downfall of England, this we know. And may it not be true that some last puff of the tempest that scattered the Armada did actually penetrate into the Escurial garden and deflower the little Infanta's rose, bringing a flush of surprise and anger into her sweet child's face? "Madam," is the duenna's explanation and comment, "everything in the world belongs to princes except the wind." Was ever moral of a great event so daintily enforced? But there is another poem in the "*Légende*" in which we hug reality even more closely, the poem entitled "*Les pauvres Gens*" ("*Poor Folk*"). The world is not so ill a place but that this touching and beautiful story has had its counterpart, many a time and oft, among the authentic annals of the poor. The fisherman who takes two little orphans into his already overbrimming family belongs fortunately to a world not altogether of legend.

Between the story of the "*Pauvres Gens*" on the one hand, and Canute the Parricide on the other, come legends of chivalry—of the mighty battle between Roland and Oliver, of the taking of Narbonne by Aymerillot, of the Cid, of other paladins ;—legends of the East, of Sultan Mourad saved from the last extremity of hell by his kind-

ness to a swine ; legends of the Renaissance, and of Pan singing his strange wild song on Olympus before the gods ; legends of to-day ; and also apocalyptic visions of the future.

For these last I confess to not caring very greatly. They are the preludes to a class of poem which finally invaded Victor Hugo's art, and made it too often diffuse, formless, and void of interest. The singular advantage to the poet of the subjects which he mainly treated in the "*Légende*" was their comparatively concrete character. Each contained a story ; and, as he was an excellent story-teller, and a great artist to boot, he naturally set himself to tell his story as well as possible, and with as little abstract disquisition and declamation as might be. Thus the legends did him the inestimable service of holding his work together, of forcing him to concentrate himself.

Language and verse too are of the highest quality. There is a force, an almost rugged strength about the former quite new in French poetry. As Milton takes English, and hews it, like a sculptor hewing marble, into shapes of imperishable beauty, so here Victor Hugo takes French, a far less plastic material, and moulds it to his every purpose in his puissant hands. He never violates its laws, for, rash innovator as he has been called, he thoroughly respects the material in which he works. But he bends it to his fancy and imagination, and the result is superb. And as with the language, so with the verse. The French alexandrine becomes ductile to his touch, and as fit as our own blank verse for every highest poetic use. The "*Légende des Siècles*"

is the work of a great master. It marks an epoch in the history of French literature.

And with the prodigality of genius Victor Hugo was about to give to the world, beside this masterpiece in verse, a masterpiece in prose. The “*Légende des Siècles*” had appeared in the autumn of 1859. On April 3, 1862, was published simultaneously in Paris, Brussels, London, New York, Madrid, Berlin, St. Petersburg, and Turin, the first volume of the “*Misérables*.”

The book had been begun, we are told, long years before, even so far back as in the days anterior to 1848, and had afterwards been gradually worked upon, added to, altered. And it bears in some respects the mark of this slow fitfulness of growth. Not that there is any want of unity of effect or purpose. That is very far from being the case. But the unity, to use a very old image, which, however, is here so apposite that I must be forgiven for making it do service once more—the unity is that of a Gothic cathedral, and quite compatible with all kinds of episodical additions and out-growths. These, in the “*Misérables*,” are of very diverse interest and value. It would be too much to affirm that a description of the battle of Waterloo was essential to the book. No doubt the father of Marius, the second hero, is all but slain in that “king-making victory,” and Marius himself greatly influenced in after years by the manner of his father’s rescue. But to hold it necessary on this ground to give a full account of the battle is taking a very liberal view of the novelist’s functions. Nevertheless few of us would wish Victor Hugo’s description unwritten. It may or may not be

strategically exact—of this I am no judge. It is at least a fine effective piece of battle painting, and not to be spared. But when Marius in turn is rescued, and the novelist thereupon thinks it incumbent upon him to give an account of the origin and history of the sewers through which the wounded youth is borne,—why then we feel inclined to use the reader's privilege of "skipping." Except to a specialist, the sewers of Paris, regarded in their historical aspect, can scarcely have an interest for any one; and the specialist would probably regard Victor Hugo's erudition as not beyond cavil.

However, this is but playing in the outskirts of a mighty book, or, to go back to our cathedral image, entering by some little lateral door, and peeping at the side-chapels and sacristy to the neglect of the great dim nave and soaring choir. Let us enter, as enter we should, by the west portal which Victor Hugo himself has prepared for us.

"So long," says the preface, "as, owing to the operation of laws and customs, there exists a social damnation creating artificial hells in the midst of civilization, and complicating destiny, which is Divine, with an element of human fatality; so long as the three problems of the age, the degradation of man through proletarianism, the fall of woman through hunger, the atrophy of the child through night, are unsolved; so long as in certain regions social asphyxia is still possible; or, in other words, and looking at the matter from a more extended standpoint, so long as ignorance and misery remain upon the earth—so long books of this kind may not be without use."

Of the influence of laws and customs in all this, I may have somewhat to say hereafter. Meanwhile we will look into the "artificial hells" of which the novelist speaks.

Jean Valjean the hero, the leading character of the book, is a convict. He had stolen a loaf of bread for his starving sister and her seven starving children, and had thereupon been sent to the hulks. Here he remained for several years, and at last, when the story begins, comes forth into the world again, bearing in his heart a bitter hatred for his fellow-men. His first experiences of outside life are not calculated to dispel this feeling. Though able and willing to pay for a night's lodging, he is driven from place to place, and at last even barked and bitten out of a dog-kennel. Then a kindly soul directs him to the dwelling of the good bishop, Myriel. The man is quite worn out and desperate, and makes no attempt to conceal his character. But the saintly bishop entertains him hospitably, and as an equal, and sets him to sleep in the guest-chamber of the house. Jean Valjean wakes in the middle of the night. Evil and good contend in his breast. He rises stealthily, and steals his generous host's small supply of silver plate. In the morning he is found by the rural police with the spoons and forks on him, and naturally brought back as a thief. But M. Myriel obtains his release by saying that the articles have been given to him, and adds to the gift two silver candlesticks. Even yet, however, the evil in Jean Valjean's heart is not conquered. In a strange state of mental perturbation, he robs a child of a two-franc bit. Then a great horror of himself comes over him.

Nor is his repentance transient. We next find him as a beneficent manufacturer, under the name of M. Madeleine, making his own fortune and that of the district in which he has settled. He is honest, kindly, and generous.

One of his good works is to rescue a poor sick girl called Fantine, who has been seduced and heartlessly abandoned by a Paris student—a poor girl who, to support her little daughter, has sold all—her shame, her teeth, her hair. But just as he is about to bring together the dying mother and her child, a terrible complication arises in his own affairs. He hears that a man has been arrested for his own old theft of the two-franc bit, and may possibly be condemned. Then a fearful conflict arises in his breast. Is it his duty to give himself up to justice, to cut short his own most useful career, to go back to the living death of the hulks? Fiercely does the tempest rage in his brain. For a whole night it sways this way and that. At last right prevails. With immense difficulty he succeeds in reaching the place of trial in time to save the false Jean Valjean.

Does the reader follow Victor Hugo's thought? Here, he seems to say, is a man who has achieved the immensely difficult task of reforming his own character, a man who is good, wise, useful,—and yet, because of his past, because in a moment of fierce mental crisis he has deprived a child of two francs, he is branded and irretrievably ruined.

So poor Jean Valjean is retaken, and sent back to the hulks. But he escapes; and finds poor little Cosette—who meanwhile has been villainously used by the people to whom Fantine had confided her—and hides himself from pursuit in the great wilderness of Paris. There the child grows into a beautiful girl; and Love takes her destiny in hand, as Love sometimes does take in hand the destiny of men and maidens, and she gives her

heart to Marius de Pontmercy. But though Love be ready enough to direct our lives, he does not always lead them into the smoothest of paths, and Cosette and Marius have to pass over many rocks and direful places. Jean Valjean, too, has his troubles. Indeed one rather pities him than the two lovers, for they have youth and its hopefulness on their side, while he is old, and Cosette is his all. However, here again, he conquers all lower feeling, resigns his more than daughter to her lover, saves that lover's life at the risk of his own, and without that lover's knowledge ; and then dies, almost forsaken, except at the very last, by those for whom he had done so much.

But how, by any weak process of epitome or analysis, convey to the reader any impression of the power of this great book ? There are chapters upon chapters in it that for grandeur and pathos cannot be surpassed. Such is the chapter to which I have already alluded, the chapter entitled "*Une tempête sous un crâne*," describing the storm in Jean Valjean's brain when he is debating whether he should deliver himself up to justice. Such are the chapters relating to poor little Cosette,—her terrified walk in the dark to the village well —her little broken wooden shoe put out on Christmas eve in the hope that some Santa Claus might pass that way—though, heaven knows, no Santa Claus had ever put anything into it on previous occasions. Such—I am quoting almost at hazard—is the short chapter comparing Jean Valjean's position to that of a man lost and sinking in mid-ocean. And everywhere the descriptions live, the events move. We see it all. Each scene is present to us. And the characters live too. Bishop Myriel, apos-

tolic as he may be, is no lay figure. Jean Valjean is a man of very real flesh and blood. Poor Fantine one seems to know ; and Cosette most certainly ; and Marius as a "jeune premier" of a very French type. Marius' royalist grandfather, M. Gillenormand, is also genuine enough, if somewhat caricatured. And there are two characters that live not only as individuals, but as types. These are, Javert, the ideal policeman, whose life is wrecked on finding that Jean Valjean, though a convict, is not a scoundrel ;—and Gavroche, the little street arab, the town sparrow of Paris. The latter with his light gaiety, his ready wit, his queer kindness, his pluck under fire, may be said to have won a place in universal literature beside Gil Blas and Don Quixote, and mine uncle Toby, and Sam Weller. Did not M. Renan lately inform us how many years of study and anxious thought it had taken him to reach the high serenity of Gavroche's religious opinions ?

Victor Hugo was not one of those novelists who are fond of masquerading in their own novels. We can nowhere point to any character of his and say that it is merely Victor Hugo in another dress, and represents either what he thought himself to be, or wished himself to be thought. The character who comes nearest to be an exception to this is Marius de Pontmercy, whose experiences have a very suggestive similarity to the early experiences of the novelist. Both have been brought up in monarchical opinions. Both have imperialist fathers who have served under Napoleon. Both work through imperialism to republicanism. Both fall in love—though that perhaps is not distinctive,—and in both cases the love-idyl is con-

nected with a garden. Both, too, are crossed in love separated by untoward chance, from the object of their affections ;—and both pass through a season of penury and almost want ; and finally the love-suits of both are crowned with success.

The publication of the “*Misérables*” was an event, as many of us can very well remember. The power and pathos of the book were unmistakable. Vigour in the painting of the scenes, admirable effectiveness in narration, real vitality in the characters, intense sympathy with the down-trodden and suffering, a style such as no other contemporary, and but few writers of any other time could handle—when a novel possesses qualities like these, it is a very great novel. Here, as in the “*Légende des Siècles*,” Victor Hugo was at his best. So every one read the book, and nearly every one admired it, and it flew into all lands upon the wings of many languages. When the publication was complete, on the 16th of September, 1862, M. Lacroix, the publisher, gave a grand banquet to the author at Brussels. Thither flocked liberal journalists and literary men from Paris, and writers from various quarters, and all was conviviality and congratulation.

But soon the busy worker was at work again. In the spring of 1864 appeared his book entitled “*William Shakespeare*”—a book, as Mr. Swinburne admits, that “throws more light on the greatest genius of our own century than on the greatest genius of the age of Shakespeare.” And in good sooth the light it throws on the latter is scarcely blinding. But it shows what Victor Hugo himself had come to regard as the poet’s mission. The

poet, as he here tells us, “for a truth, is a priest. There is but one pontiff here below,—genius.” Whereupon, if we ask by what signs we are to recognise our spiritual pastors and masters, we are told that they are “the men who represent the total sum of the absolute realisable by man,” that they attain to the “highest summit of the human spirit,” “the ideal,” where “they occupy thrones,” and that their thoughts plunge into the abyss of the infinite. Alas, it was an evil day when Victor Hugo embraced these ecclesiastical opinions. Exile had served him well in many ways. It had forced him to concentrate himself on great work, as he had not done, latterly at least, amid the mental dissipations of Paris. But clearly brooding in solitude, and receiving the adulation of his own party, were not without danger. To few is it given in this world to pontificate with advantage, or even with impunity.

Meanwhile, during the publication of all these books, the snows of age were gathering on the poet’s head. He had left France in 1851 a middle-aged man of forty-eight. In the autumn of 1865, when his next volume after “William Shakespeare” appeared, he had reached the riper age of sixty-two. But though the “*Chansons des Rues et des Bois*” (“The Songs of the Streets and the Woods”) is thus not the production of a young man, yet it is, in the class of subjects treated, and the mode of treatment also, the most juvenile of the books written by Victor Hugo after he was out of his teens. “There is a certain moment of life,” he says in the preface, “when . . . the desire to look back becomes irresistible. Our youth, dead in her beauty, reappears to us and insists on claiming

our thoughts." So the poet sings here of youth's light gossamer loves, the very thistledown of early passion—sings, though with less of sensuality, almost as Béranger had sung of Lisette—sings, though with less of real feeling, as Burns had sung of Bonnie Jean and Highland Mary. Does the singing sound false at all? is the reader inclined to ask; does the quavering falsetto of age mar the delivery of the notes? Why, no; one cannot fairly say that there is any defect of this kind. If the book were a young man's book, one would accept it as genuine enough, and have nothing but praise for the deft skill, the admirable craftsmanship of the versification. Our only feeling of incongruity comes from a knowledge that the writer must long have put away the childish things of which he speaks.

A novel comes next in the long roll of Victor Hugo's works, a novel with a short preface dated March, 1866. It is entitled "*Les Travailleurs de la Mer*" ("The Toilers of the Sea"), and the scene is laid partly in Guernsey and partly on a lone rock-reef amid the ever-boiling waters. Gilliatt and Déruchette are the hero and heroine—the latter a pretty piece of not very distinctive womanhood—the former a fine fellow, gifted with a strength of body and will beyond mortal. Poor Gilliatt! the fates were decidedly harsh to him. Why does Déruchette unwittingly and unintentionally win his heart by writing his name in the snow? Why, when her uncle's steamer is lost, does she—like any princess of romance sure of the inestimable value of her charms—proclaim that she will marry whomsoever rescues the wrecked vessel? Ought pretty girls to make such rash vows,

especially when they have no intention of keeping them? Vainly does Gilliatt go forth to the reef where the boat has been cast by the sea ; vainly does he fight for long weeks against mechanical difficulties wellnigh insurmountable, against the weather's worst inclemencies, against hunger and thirst, against growing weakness, against a monstrous devil-fish of the deep, against the full fury of an Atlantic storm ; vainly does he conquer all these, rescue the steamer's engine and bring it back single-handed to St. Sampson. When he presents himself, all weather-scarred and hacked with toil, before Déruchette, he finds that that young woman has, during his absence, given her heart to a pretty young clergyman. Hyperion to a satyr they stand before her. Gilliatt recognizes his defeat ; magnanimously helps his rival to a somewhat unceremonious marriage ; and suffers the sea to swallow him up just as the boat containing the bride and bridegroom dips below the horizon. An unhappy ending certainly. A man of this power might have done mankind some service. Pity so strong a craft should have foundered in the wake of a light little feather-brained pleasure-boat like Miss Déruchette. But such things have happened since the days of Solomon, and were possibly not even unknown before the reign of that wise monarch.

It were idle to declare that “*Les Travailleurs de la Mer*,” notwithstanding some grand seascapes, and a kind of Titanic heroism in the principal character, is at all comparable with so majestic a work as “*Les Misérables*.” But at least the world to which it introduces us is a sufficiently real world for all art purposes. The

secondary personages are quite possible—some even apparently sketched from actual life—and Gilliatt himself is a character that the world of fiction could ill spare. When, however, we come to Victor Hugo's next novel, "*L'Homme qui rit*" (the "*Laughing Man*"), published in 1869, we are carried to regions the like whereof were never trodden by human foot nor conceived by a healthy imagination. "The repulsiveness of the scheme of the story," says Mr. Louis Stevenson, "and the manner in which it is bound up with impossibilities and absurdities discourage the reader at the outset, and it needs an effort to take it as seriously as it deserves." Mr. Louis Stevenson is a critic from whom one differs with doubt—feeling that he may probably be right; but yet I confess to not seeing how such a book can deserve to be taken seriously at all. To me it is simply a preposterous, an impossible book. That Victor Hugo possessed no knowledge of the England of Queen Anne's day is abundantly clear. That his knowledge of the England of any day was of the most fantastic character scarcely needs formal proof. The historical names in this book are misspelt in a way that shows ignorance as well as carelessness. The English names which he invents for his imaginary characters, Lord Tom-Jim-Jack, Govicum, the pot-boy, Phelem-ghe-madone, the prize-fighter, Barkilphedro, the courtier-parasite, are names to excite derision. Whether Southwark was pronounced "*Soudric*" in Queen Anne's days, I don't know. It certainly is not pronounced "*Sousouorc*" now. Neither is "*Fibi*" or "*Vinos*" at all likely to convey to a French ear the sound of the English "*Venus*" or "*Phœbe*." Neither are Englishmen in

the habit of addressing God as "My Lord," though Victor Hugo gravely assures us that this is the case, and bases moral teachings on that form of address to the deity. Neither was a "wapen-take" a kind of superior policeman. Neither was James II. in any sense a "jovial" monarch. Nor, in short, does anything in this fantastic book bear any resemblance to anything that ever was or ever will be.

However, let us take the book out of the region of history and political purpose altogether, and regard it simply as a novel. Let us accept it as true that a king—James II. if you like—has, for eccentric purposes of his own, ordered a set of polyglot scoundrels to cut off a boy's lips, so that he shall wear an eternal grin upon his face; and then let us follow the boy's fortunes—his meeting with Dea, the little blind girl, with Ursus the kindly misanthropic tramp; his growth to manhood; his love for Dea; his love passages with Lady Josiane the virgin harlot; his recognition as a peer of the realm; his single speech to their lordships; his return to Ursus and Dea; and his death. Let us look at the persons he comes across in the course of his career. Can it be said that a single one of them lives? They all strut about in a galvanic sort of a manner certainly, and they all talk, and in exactly the same way. But does a single one of them live? Can one of them, with the single doubtful exception of Lady Josiane, be said to have a human character? And how many of the scenes possess even as much likelihood as is required for the purposes of fiction? Certainly not the sinking of the vessel containing the polyglot scoundrels aforesaid, nor the amazing

trial, nor the wonderful prize-fight in which foul blows are freely allowed. Of course there are striking scenes and pieces of literary art. A writer like Victor Hugo does not write a long book without showing signs of his power. Charles Reade held him to be the one great genius of this century, adding, however, that he sometimes had the nightmare. In "*L'Homme qui rit*" the nightmare decidedly predominates.

Place the book in thought, for a moment, beside Thackeray's "*Esmond*." Both relate to the same period of English history. The one reproduces faultlessly the spirit of that period, and makes the days of Queen Anne live for us again. The other, with far greater professions of accuracy and research, is an absurd caricature. Victor Hugo was the great romanticist of his time; Thackeray the great English classic of his generation. There were things that Victor Hugo could do magnificently, and that Thackeray could not touch. But in such comparison as this the Frenchman's work is "as the small dust of the balance," and kicks the beam. Place "*L'Homme qui rit*" beside "*Esmond*," and its unreality becomes doubly glaring.

The publication of "*L'Homme qui rit*" takes us to 1869, and therefore to the eve of Victor Hugo's re-entry into France. If we look back to the fourteen years of his sojourn in Guernsey, we shall see that they had been filled with excellent work. Indeed his pen had been so prolific as to leave me scant space for the chronicling of domestic events. This, however, is the less to be regretted, inasmuch as the years in question were, for the most part, barren of striking incident. Guernsey had been

like a haven of refuge after the storms in Paris, Brussels, and Jersey. Of the way of life at Hauteville House, a word has already been said. The morning was spent in work. At twelve came the French breakfast, or early lunch. Then there were long walks—for the poet was here an unwearied pedestrian, as he had always been when in Paris ;—and many huntings about for bric-à-brac of various kinds ; and billiards ; and other forms of amusement. With the society of Guernsey, I was informed, locally, that the Hugos did not mix very much. Every Thursday a dinner was given to some of the poorest children in the island. Of course the poet paid the penalty of greatness in having an enormous correspondence. With the success of his books wealth had returned, and his well-known generosity tempted applicants from all quarters. Literary letters also flowed in upon him. Scarce a French author-aspirant who did not wish to submit his verse or prose to “the Master.” Towards such “the Master” was not always quite ingenuous. It has been said of Lamartine, Victor Hugo, and George Sand, that the first answered young writers by saying, “Thank you, you are very good ;” the second, “Thank you, you are very great ;” and that the woman alone had sufficient candour to express an honest opinion on the productions submitted to her judgment. The bill is a true one. Victor Hugo’s praises on such occasions were perfectly indiscriminate, and often—as in the case of M. Maxime du Camp—quite absurdly fulsome.

The years between 1856 and 1870 are marked by four events of capital importance in the domestic annals of

the Hugos—for it seems unnecessary to give any record here of summer trips to Brussels, Zealand, and elsewhere. It was during these years that François Hugo loved and lost a Guernsey girl to whom he was engaged, and greatly attached ; that Adèle Hugo, much against her father's wish as I gather, married an English naval officer ; and that Charles Hugo married, at Brussels, a ward of M. Jules Simon, the eminent orator, writer, and statesman. And it was on the 28th of August, 1868, and also at Brussels, that Madame Hugo bade to her husband and children her last farewell. She had asked to be buried beside her daughter, at Villequier.

So, amid the joys and sorrows that are common to the greatest as well as the least of men, did the years of the poet's exile wear to a close. But before passing on, it is only just to record the impression which he left on the mind of one who knew him well at this time :

“ He was good enough,” says M. Asseline, “ to accept my friendship, and to give me his own in return. I was long his neighbour, and often his guest. We have travelled together.¹ With his sons he was ever radiant, the gayest, and most alert of us all. Everywhere, and at all times, I have seen him gracious and good,—I am describing him here as I have known him in the intimacy of private life, and such as he shows himself in his letters—kindly and indulgent to his own people, and full of good-will towards all. It is not right that future generations should only remember Victor Hugo as ‘ the Master,’ the pontiff-king. There was also in him the man, the kindly relation, the friend, and in each of these characters he was most lovable.”

¹ All testimony is unanimous that he was the most delightful of travelling companions, uniformly good-tempered and ready to be pleased.

CHAPTER XI.

IN August, 1870, the eyes of all the world were turned towards the frontier lands between Germany and France. At the news of the first disasters to the French arms, Victor Hugo left Guernsey and hurried to Brussels. Thither, in the first days of that terrible September, came tidings of the Emperor's capitulation at Sedan; and, on the 4th, the news of the revolution which had swept away the wreckage of the Empire, and established a Republic on the ruins. Victor Hugo might have returned to his native land in 1859, and again ten years afterwards; but though his son François had accepted the later amnesty, and had for some months been doing opposition journalistic work,¹ he had haughtily declared that, so long as Louis Napoleon held criminal sway, he should not deign to put his foot on French soil. Now, however, the way was open. The Empire was gone; the country in sore need. On the 5th he took the train from Brussels to Paris.

M. Claretie, the voluminous novelist, dramatist, journalist, who has just been made an Academician, accompanied the poet on this somewhat memorable journey,

On the *Rappel*, in Paris.

and has told its incidents. He describes how Victor Hugo, wearing a soft felt hat, and carrying a small travelling bag slung across his shoulders, took his ticket for Paris—the very Mecca of all Frenchmen—with a very natural emotion; how he sat in the train watching for the first glimpse of the old loved country; how tears filled his eyes at the sight of some of Vinoy's defeated soldiers, and how he tried to cheer the poor worn-out wretches by shouts of “Vive la France! Vive l'Armée! Vive la Patrie!” Then the shades of evening began to gather, and it was ten o'clock before the train reached its destination. Charles Hugo was accompanying his father. But on the platform were François Hugo, and the poet's friends and disciples, M. Vacquerie and M. Paul Meurice. These raised a great shout of “Vive Victor Hugo!”—but there were wounded men in the train, and the shout was silenced;—to be taken up again, however, outside the station, by thousands upon thousands of throats, and to roll, like a great sea of acclamation, all along the way to Paul Meurice's house. “Never,” says M. Alphonse Daudet, the novelist,—“never can I forget the sight as the carriage passed along the Rue Lafayette, Victor Hugo standing up and being literally borne along by the multitude.”

So there was great and pardonable excitement, on either side, as the old man, whose vigour was still that of youth, came back among the people he loved so well;—and he spake to them words, not unfitting nor wanting in appropriate eloquence, on the duty of defending and saving Paris, and the immediate duty, above all, of being at unity among themselves.

a mood to be moved by antithetical distinctions between the Empire and France's new government, still less to listen patiently to panegyrics of Paris as the place where "men learn to live," "the city of cities," "the city of men," the city occupying the position of pre-eminence formerly occupied by Athens and Rome,—the "centre" beside which "Berlin, Dresden, Vienna, Munich, and Stuttgart," were but as provincial capitals. When the beast that lurks in the dark places of our humanity is roused and roaring, no remembered services, however great, will appease his rage. Did not the people of Selkirk throw stones at Sir Walter Scott's carriage during the Reform agitation, and the populace of London break the Duke of Wellington's windows? Nay, within a very few months of the issue of this manifesto, was not Victor Hugo himself, when speaking in defence of the Communards, to have his hour of unpopularity among his own countrymen, and to be bitterly assailed and reviled, even by such approved liberals as M. Sarcey? Could it be reasonably expected that the Germans, who owed Victor Hugo nothing, should be stayed in the full rush of conquest by invidious comparisons between their own cities and Paris? They have somewhat to answer for in connection with the war. But that they took this manifesto very ill, and even suggested the propriety of "hanging the poet," can scarcely excite our wonder.

The poet, meanwhile, has decided to remain in the beleaguered city, and take his share in its perils. That he should be a personage there, or, indeed, anywhere, is a matter of course ; and pieces from the "Châtiments" are freely recited for patriotic purposes, and one of the cannon presented to the city by the Society of Men of Letters is christened with his name. But he takes no very active part in such politics as are possible, and refuses to abet any revolutionary movement that might hamper the defence. As usual, he bears a brave heart, cheering all those about him by his gay endurance of the privations incident to a siege. He even wears the little military *képi* of the National Guard, incurring thereby the contempt of General Trochu, whose sneers he afterwards answers in kind. His sons are in Paris also, and his two infant grandchildren, Georges and Jeanne—of whom he is to write so often and so pathetically ; and on the 1st of January, amid the flash of swords and the sparkle of bayonets, he takes to the little ones his new year's gift of toys. He wanders about the city a great deal, too, revisiting the old haunts so familiar in days of yore ; and once, when musing in the place where the garden of the Feuillantines had been,—musing of his far-distant childhood, of his mother, of the wife he has lost,—a bombshell breaks in rudely upon his meditations. Anon the poor little baby Jeanne falls ill, for the unnatural diet tells heavily on infant life, and a great fear falls upon the grandfather's heart lest the child should die. He writes a good deal, of course, writes much of the verse that finds a place in the "Année terrible," published two years afterwards :

verse denunciatory of Louis Napoleon, and the Prussians, and kings, and priests, and full of patriotism; but inferior, as I venture to think, to the verse which he would have written, in less didactic days, on the terrible tragedy being enacted before his eyes. And all this while the weary weeks of the siege are crawling onwards, with hope now and again of some successful sortie, or of relief from without, and the persistent accumulated horrors of war, famine, and winter; and finally the dread certainty that everything is in vain, that General Trochu has no plan, has never had a plan, and that capitulation is inevitable.

So came the end; and on the 8th of February, 1871, elections were held, with Germany's consent, to determine whether poor France should drain the cup of war to the last dregs, or submit to be dismembered and despoiled. Victor Hugo was elected second on the list, with 214,169 votes, by the Department of the Seine, and reached Bordeaux, where the Assembly was to meet, on the 14th. Seldom has popular assembly had to decide on a more momentous issue, or been placed between the horns of a more dreadful, a more hideous dilemma.

Victor Hugo spoke in the Assembly itself three times, and in committee once. He spoke in favour of the continuance of the war, in favour of the deputies from Alsace and Lorraine retaining their seats in the Assembly, even after the cession of the two provinces; in favour of the retention of Paris as the seat of government; in favour of recognizing the election of Garibaldi, which it had been proposed to annul. The last speech was violently interrupted. Garibaldi's name was of an ill savour

in the Assembly. France, in her hour of anguish, had turned towards her rural gentry, and a great proportion of the members were royalists and good Catholics. To these Garibaldi's anti-clerical opinions were a stone of stumbling. Victor Hugo had already, in his first speech, offended their susceptibilities by ill-advised remarks on the Pope. When therefore he declared that Garibaldi "was the only general who had fought on the French side, and not been defeated," there arose a mighty hubbub,—in the midst of which he, then and there, resigned his seat.

Not an altogether dignified proceeding perhaps. If a man, however eminent, enters parliamentary life, he must accept its conditions. He can hardly expect a miscellaneous popular assembly to listen to him as the College of Cardinals listen to an allocution from the Papal chair. Though, however, Victor Hugo certainly exhibited some petulance on this occasion, yet it cannot be a matter of regret to his admirers that he abandoned a sphere for which he was not certainly now, if he ever had been, well fitted. His few speeches in the Assembly are sufficient to show how entirely he had become unfitted for practical politics.

This happened on the 8th of March. On the 13th, and just as he was about to take his departure from Bordeaux, a terrible calamity fell upon him. He had on that day invited a few friends to a farewell dinner. Charles Hugo was to be of the party, and started in a cab for the place of meeting. When the cab arrived, he was found to be dead, struck down by a fit of apoplexy. The father took the body of his son to Paris, and buried it there on the memorable 18th of

March, amid the first sputterings and mutterings of the horrible insurrection of the Commune,—buried it with funeral procession of promiscuous National Guards, and with insurgents on the barricades presenting arms to the dead. Then, on the 21st of March, he went on to Brussels to settle his son's affairs.

But not here, and not yet, was this stormy petrel of politics to find rest. From Brussels he watched, as may be supposed, with an intense absorbing interest—all Europe was watching it too—the outbreak of revolutionary passion in Paris. His sympathies, on the whole, were on the side of the Commune. Was not Paris the first city in the world? Was she not, above all other cities, entitled to govern herself? Was not the majority of the Assembly a majority of reactionists? Was it not their ineptitude that had goaded the people of Paris into revolution? Accordingly, though forced to admit that the movement, involving as it did a civil war almost within gunshot of the Germans, was at least inopportune, and though constrained to condemn many of the actions of the Communards, their murders and incendiarism, and the destruction of Napoleon's column, yet, as I have said, his sympathies were, on the whole, rather with them than with the party of order. So when they were defeated and ruthlessly punished, he lifted up a voice of protest. The Belgian Government had decided not to treat them as political refugees, but as the enemies of mankind, and to refuse them admittance into the country. He, on his side, declared, publicly and with pomp, in a letter to the *Indépendance Belge*, dated the 26th of May, that if any

escaped Communard came to his dwelling, "Place des Barricades, No. 4," he should be taken in and protected. This letter, not altogether unnaturally, exasperated the loyal Belgians. Some fifty of them collected, on the night of the 27th, before his house, and threw stones at the windows, and howled out their execrations ; and on the 30th of May the Government, for the second time, intimated to him that he must go elsewhere. Accordingly, on the 2nd of June, he had made his way into Luxembourg.

But from this date, at last, something like comparative peace is reached. Of course a man like Victor Hugo, with his passionate convictions, keen interest in public affairs, and full assurance that he possesses a seer's foresight for the direction of mankind, is not likely to abandon politics altogether. In this same year, 1871, we find him refusing, ultra-liberal as he is, to accept an electoral mandate, but presenting himself once more, and this time unsuccessfully, as a candidate for re-election to the Assembly ; and on the 30th of January, 1876, he is elected to the Senate. But practically, after June, 1871, his career as an active politician is over. If he still writes and speaks in favour of the amnesty, the necessity of making Paris once more the capital of France, and other matters political and social, he does so as a publicist only, and not as a militant party man. More and more, as the end draws near, does he withdraw from the arena.

But still he wrote apace. Many poets of renown have not, in their whole lives, written as much as he published between 1872 and 1885, that is, between his

seventieth and eighty-third years. The volumes during that period followed one another so rapidly that it is scarcely possible for the epitomizing biographer to do more than barely catalogue their titles. First, on the 20th of April, 1872, appeared "*L'Année Terrible*," to which I have already referred, using it as a record of the poet's life during the siege. It is dedicated "to Paris; the Capital of the Nations." Next, on the 20th of February, 1874, came out his last novel, "*Quatre-vingt Treize*" ("Ninety-three"). This was written mainly during a season of retirement at Guernsey, and may occupy a place among his books by the side of the "*Travailleurs de la Mer*," and far above "*L'Homme qui rit*." The story is comparatively simple. A republican battalion—we are, as the title of the book implies, in 1793—has found in the woods of the Vendée a poor woman and her three children, and has taken the children into its affection. The children are captured by the royalists, and the mother is wounded and left for dead. Then the royalists in turn are defeated, and take refuge in a castle, where they are besieged, and in sore straits. Whereupon they offer to give up the three children if allowed by the besiegers to go forth safe and sound;—otherwise the children will be burnt. This is a bargain which the attacking party, notwithstanding the love they bear to the little things, cannot accept, and the assault begins. It is of a terrible character. The royalists are killed one by one, all except their Marquis-chief, who is wonderfully saved through a sort of moving stone in the wall. The last man left, as he is dying, musters his remaining strength to light the slow match which is

to set fire to the tower on the bridge in which the children are confined. Nothing can save them. The flames are flickering up in long tongues, higher, higher, higher, from the lower storey. Suddenly the mother, who has recovered from her wound, and for long days has been looking for her children, appears on the scene with a lamentable cry :

“ The figure they saw there was no longer Michelle Fléchard, it was a Gorgon. Those who are miserable are formidable. The peasant woman was transfigured into one of the Eumenides. This commonplace village wife, vulgar, ignorant, incapable of thought, had suddenly acquired the epic proportions of despair. Great sorrows are a gigantic enlarging of the soul ; this mother now represented maternity ; everything that epitomizes humanity is superhuman ; she stood there, on the border of that ravine, before that conflagration, before that crime, like some sepulchral power ; she had the cry of a beast, and the gesture of a goddess ; her visage, from which curses proceeded, seemed like a flaming mask. Nothing could be more sovereign than the lightning that flashed from her tear-drowned eyes ; her look cast thunderbolts on the conflagration.”

Her anguish is so terrible that it excites compassion even in the iron heart of the escaped royalist chief, still lurking in the adjacent woods. He returns to the castle with the key of the tower, saves the children, and is, of course, taken. The republican chief, who happens to be his nephew, does not, however, consider that he ought to be guillotined as the consequence of an act of humanity, and allows him to go free. Whereupon the nephew is himself guillotined by order of a delegate from the Convention, who has educated him, and loves him with a passionate love. As his head falls, the delegate shoots a bullet through his own heart.

Now, of course, it must at once be apparent that such a story demands certain concessions on the reader's part. He must, for instance, be prepared to take for granted the probability that three little peasant children should acquire an importance so disproportionate in the contest between bodies of armed men. He must further be ready to accept it as likely that the royalists would, out of the merest wantonness—for at that stage their own fate was sealed—do their best to burn the pretty little creatures. He must also make up his mind to receive, with as much confidence as he can command, a good deal of quasi-history. And if he further thinks that the mother would be a more pathetic figure if less purely animal, I, for one, shall not blame him. But, having once made these concessions and reserves, he will be a reader difficult to please if he does not admit that the fighting in the book is done in a masterly way, that the description of the children at their play in the tower is a pretty, smiling, happy picture of childhood ; and that the book generally, though now and then, as in the passage quoted, somewhat thunderous in style, is yet full of passages of striking graphic prose.

Passing by Victor Hugo's rather pompous account of his two sons, given as an introduction to Charles Hugo's "*Hommes de l'Exil*," published in October, 1874, we come next to the three volumes of "*Actes et Paroles*" ("*Deeds and Words*"), published respectively in May, 1875, November, 1875, and July, 1876. These volumes contain his utterances on public matters between 1841 and 1851, 1852 and 1870, 1870 and 1876—all utterances of capital importance to the biographer, but with

which the reader need not here be detained. For on the 26th of February, 1877, we come to what should interest him more, to the issue of a new series of the “*Légende des Siècles*.”

Are these two volumes, then, equal to the two volumes published eighteen years before? Hardly. As time went on, the habit of preaching had grown terribly on the poet. He did it not only in his speeches, where the preaching may have been admissible, and in his prose, where it might have been spared, but in his verse, which at last it almost drowned. He had preached a great deal, a very great deal, in “*L'Année Terrible*.” He preached a great deal in these two later volumes of the “*Légende des Siècles*;” and in “*Le Pape*,” published in April, 1878, and “*La Pitié Suprême*,” published in February, 1879, and “*Religions et Religion*,” published in April, 1880, and “*L'Âne*,” published in October, 1880, he may be said to have done nothing but preach. When, however, in the volumes of the “*Légende*” now immediately before us, he condescends to leave the pulpit and to become once more the minstrel, the teller of stories, the poet, then all his old skill comes back to him, and he is the Hugo whom no one can approach. Beside the masterpieces of the first series one can place, for power and weird horror, “*L'Aigle du Casque*” (“The Eagle on the Helmet”), the story of the unequal combat between Tiphaine the hardened warrior and Angus the stripling, and of the fierce chase of the latter through the woods—and then of the punishment inflicted on Tiphaine for his misdeeds by the bronze eagle upon his helm. Nor, for pathos, does the earlier

series contain a story more touching than the story of "Petit Paul" ("Little Paul"), the poor motherless child whose father marries again, whose grandfather takes the mother's place, and then dies also, leaving the helpless three-years mite doubly forlorn, forsaken, misused, until one winter night he strays out to the churchyard where his grandfather lies, and is found sleeping the sleep that has no earthly morrow. Two battle pieces also, "Jean Chouan," and "Le Cimetière d'Eylau" ("The Cemetery of Eylau"), the latter full of musketry-crash and cannon music—these should be mentioned as equal to the poet's best. Why, why in the days of isolation and comparative solitude, in Jersey and Guernsey, had it ever been borne in upon him that he had a prophet's mission? Why did he not rest content with the poet's laurel?

Of the books just enumerated I do not propose to say very much. "Le Pape" is constructed upon a most ingenious plan. The poet-pontiff supposes that the real Pope dreams a dream, and in that dream delivers Victor Hugo's philosophy *ex cathedrâ* to whomsoever will hear. Pope and anti-Pope thus exchanging sentiments—the idea is a happy one. In "La Pitié Suprême" the poet surveys all history, and expresses his compassion at once for wicked kings and suffering peoples. In "Religions et Religion" he demonstrates the futility of all dogmatic teaching, and preaches a pure deism—the belief in a vague being, whose "solstice" is "Conscience," whose "axis" is "Justice," whose "equinox" is "Equality," whose "vast sunrise" is "Liberty." In "L'Âne," a very learned ass explains to philosopher Kant, at some

considerable length, that human knowledge comes to very little—a position which Kant is finally constrained to admit. Whereupon the poet epiloguises, and assures Kant that all things, even evil things, are working for good.

Three other books of verse did this most prolific writer produce.^x “*L’Art d’Être Grandpère*” (“The Art of Being a Grandfather”), published in May, 1877; “*Les Quatre Vents de l’Esprit*” (“The Four Winds of the Spirit”), published in June, 1881; and “*Théâtre en Liberté*,” published in 1886, after his death. Over each of these one might willingly linger. The last is a book of plays not intended for the stage. The “*Quatre Vents de l’Esprit*” is a really important work, divided into four books—satirical, dramatic, lyrical, and epic—and containing poems of very diverse value. “*L’Art d’Être Grandpère*” is a monument of the old man’s tenderness for his two grandchildren, and a book of singular grace. In what does the “art of being a grandfather” consist? does the reader ask? In being full of love, and delicate sympathy, and undeviating indulgence, Victor Hugo would reply. To the father is committed the rod of discipline. *He* may have to be occasionally stern. But the grandfather—no such harsh duty is his. He may give the little folks all they ask for, may gratify their every whim, may carry jam to them in moments of penitential retirement, may spoil them to his heart’s content. It is his privilege, his joy; and if any one ventures to ask whether such a mode of education be the best devisable, he has his answer ready:

^x It is said that there are a great many more in MS. and to be published.

Have sterner methods succeeded very well in the education of mankind? Whereupon one trusts that Master Georges and Miss Jeanne were unspoilable, and felt the exceeding beauty of the love which their grandfather lavished upon them.

And who would churlishly have begrudged to the old man the happiness which he derived from the constant society of these two children? His own children were all now gone, for François Hugo had died in Paris, after a long illness, on the 26th of December, 1873, and his daughter was divided from him by the terrible separation of insanity. What wonder if his heart went out to these last scions of his race—if he watched them, treasured their little sayings and doings, played with them, told them his beautiful stories, drew pictures for them, was a child again in their company?

Nor must it be supposed that the last years of this great man's life were anything but bright and happy. In December, 1871, on his return to Paris, he took apartments at No. 66, Rue de la Rochefoucauld, whence he removed, in 1873, to No. 21, Rue de Clichy.¹ Here he lived with Madame Charles Hugo, and his two dear grandchildren; and Madame Drouet lived there, too, doing the honours of the salon, in which he received his friends and admirers. These, as may be supposed, flocked thither. The place became the rendezvous of all

¹ In 1878 he was driven away from the Rue de Clichy by the importunity of visitors, and went to live in a quieter place, No. 130, Avenue d'Eylau, near the Bois de Boulogne. Madame Charles Hugo married M. Lockroy, the Deputy, and lived with Georges and Jeanne next door. Madame Drouet died two or three years before the poet.

that was greatest in literary France. For upwards of forty years the man had been the foremost writer in his country, one may even say the foremost poet in the world. During nineteen of those years he had been an exile in a cause which was now triumphant. Everything conspired to exalt him and do him honour. His plays were revived amid universal enthusiasm. His earlier books were spoken of with reverence, the new received with an almost-unanimity of praise. Nor, amid all this passion of admiration, did he pretermit the literary toil in which he took such keen pleasure. As he had laboured in Jersey and Guernsey, so he laboured amid the distractions of Paris, neither hindered by the claims of society and attendance at the Senate, nor with brain in aught beclouded, nor hand made weaker by old age. Old age ! Until quite at the last he never seems to have felt its touch. As one reads the record of his secretary, M. Lesclide, one is simply amazed at the man's marvellous vitality. He might be a young fellow of twenty for the things he does and the energy he displays. He never wears a great coat ; he never carries an umbrella. His favourite form of relaxation is riding on the top of an omnibus. He goes up in a balloon—a kind of amusement which Madame Drouet by no means enjoys. He is fond of little excursions in the environs of Paris, and is on such occasions the blithest of companions, as frolic as a boy, pleased with everything, the scenery, the flowers, the fare at the inn, all the little incidents of the day. Well may M. de Banville say that he is younger in these later times than he had been at thirty. At thirty he was writing of "Autumn Leaves," and singing "Songs of the

Twilight." Now, with life near its end, he is full of peace, looking death cheerfully in the face, confident in the hope of a world beyond the grave ; and ardent, too, in his faith that a happier age is dawning for mankind.

So does a serene and beautiful light linger upon the evening of his day of life. When one remembers how sadly the careers of such men as Chateaubriand, Lamartine, Alfred de Musset, wore to a close—how painful are the concluding chapters of most biographies—one can, I think, but be glad that a great man should thus live greatly to the end.

For now death at last struck the fatal blow. The poet was not to have his wish, and dandle a child of Jeanne upon his knee. On May 13, 1885, he seems to have caught a chill during one of his omnibus rides. Heart and lungs became affected. He suffered greatly, and wished for the end. On the 22nd that wish was answered. His last word, his last conscious act, were for his grandchildren.

In a memorandum given by the poet some few months before to his friend M. Vacquerie, he had said, "I give 50,000 francs to the poor. I wish to be taken to the grave in their hearse. I refuse the prayers of all churches. I ask for a prayer from every human soul. I believe in God." Such were his scant directions as to his own obsequies. But the country felt at once that its great dead ought to be buried with all national honour. He had been the foremost poet, not only of France, but of his generation. On the Republic he had very special claims, as having been her champion in evil days, and having suffered on her behalf loss of fortune and exile. So a

public funeral was fittingly decreed, and the Government decreed also that the Panthéon,—that edifice of many vicissitudes, where Mirabeau and Marat had lain for awhile, and Rousseau and Voltaire,—should be unchurched once more to receive him. Accordingly, on the morning of May 31st, the body was placed beneath the Arc de Triomphe, in a coffin palled with black and silver and royal purple, and lay there in state till the following day when it was borne to its last home, in a pauper's hearse indeed, but otherwise with such pomp, such a mighty procession, such signs of national mourning, such votive wreaths from every land, as Paris itself had scarcely seen since the day of Napoleon's funeral.¹

¹ Victor Hugo's personal estate in England alone was sworn under £92,000, and he had real property in Guernsey besides. Nearly all his money is said to have been invested in foreign (not French) funds.

CHAPTER XII.

ON February 26, 1880—that is on his seventy-eighth birthday—Victor Hugo wrote a preface for the collected edition of his writings. It is a short preface, and in it there occurs the following passage :

“Of the value of the sum of work here presented, time alone can decide. But this at least is already certain, and satisfies the author, that in our own day, in the present tumult of opinions, amid the violence of existing prejudices, and notwithstanding all passions, anger, and hatred, there is no reader, be he who he may, who, if he is himself worthy of respect, will lay down the book without respecting the author.”

This is a proud claim to be inscribed, as it were, over the very portal of the edifice reared by the writer’s genius. It fronts us there. We cannot pass it by. Let us endeavour to meet it quite honestly.

Respect, respect—why should any of us have to pause for a moment, doubting, before he gives a reply to the challenge? No one would hesitate if similarly challenged on behalf of Scott. Why does not the assent come so readily, so universally in the case of Victor Hugo?

For this reason—that, if one examines his life at all minutely, it is scarcely possible to avoid the conclusion

that the facts do not always agree with his presentation of them, and further, that the differences have at least a look of being designed so as to add to his prestige and glory. Here at once we are met by something that checks respect, inasmuch as it needs explanation. How shall we explain it? In the partly analogous cases of Goethe and Shelley, apologists have said, and said truly, that the poet often sees things differently from other men, that he sees them surrounded by a haze of imagination, in which their real outlines are blurred and lost, and that, as regards past events especially, he sees his remembered feelings in connection with them rather than the events themselves. To the full benefit of such an excuse Victor Hugo is clearly entitled. Though he claimed for himself a memory of extraordinary and minute accuracy, yet there seems no doubt that that faculty sometimes played him tricks, especially when matters affecting himself were involved. Why, for instance, should he have alleged that M. Piétri, one of Louis Napoleon's myrmidons, had offered 25,000, and even 50,000, francs for his capture alive or dead? Had he not brooded over the importance of the capture till he imagined the reward?

The poetic vision will not, however, I fear, account for all that here needs explanation. The fact is, and one says it sadly, there was a strong element of theatricality about the man. Great as he was, he liked to appear greater. His statements about himself, his surroundings, the events in which he had himself taken part, bear often the same proportion to fact that the stage bears to real life. They lack the simplicity of truth. They are, in effect, false. There, the murder is out! and if there be any

one who cannot esteem a character tainted with theatricality, why then he must leave Victor Hugo unhonoured.

But I, for one, shall not agree with him. Behind the actor in Victor Hugo there was a man, and a great man—a man, in his private life, simple, genial, kindly, and in his public life fulfilled with passionate convictions, for which he was prepared to battle and to suffer. In the essential heart of him, he was genuine enough. The theatricality, the vainglory, were of the surface.

And what were the opinions which, from the year 1849 onwards, had seized so fast a hold on his whole being? Substantially they were the opinions of Rousseau, as held by Robespierre. Man, according to these theorists, was originally good, kindly, beneficent. If he seemed to be something different it was because he had been deformed by vicious institutions—the rule of kings, the inventions of priests, the tyranny of aristocracies, the pressure of iniquitous laws. Once remove these evil influences, and he would at once go back to a state of nature, which was a state of excellence. Once let the Rights of Man prevail, and those rights would be exercised in the most unselfish and excellent manner. The voter would invariably vote according to his conscience, and with a single eye to the general good. The ruler would rule simply as the voters' delegate, and for the common advantage. Man all over the world would be the brother of man, wars would cease, property be equalized, and everybody, according to the pleasant old saying, live happy ever after.

And because the French Revolution had done so much to clear away pre-existing institutions, and to give man an entirely unencumbered piece of high tableland on

which to rear the edifice of the future, therefore Victor Hugo felt for the French Revolution a boundless love and veneration. He is never weary of singing its praises. He returns to the subject with an added zest on every possible opportunity. The "French Revolution," he tells us, for instance, "is the mightiest step taken by the human race since Christ. It is the consecration of humanity." "It was an immense act of probity." "It was nothing else than the ideal bearing the sword, . . . and closing the portals of evil, and opening the portals of good." "It promulgated truth." "It may be said to have created man over again, by giving him a second soul, a sense of right." It rendered all savage upheavals of the masses for ever impossible—this was written before the outbreak of the Commune,—and, in short, it was a movement quite marvellous and miraculous in its beneficent effects.

And if the movement itself had such a transcendent character, the actors in it were no less heroic. Michelet, the historian, asseverates, in his somewhat wild way, that the Assembly that nominally governed France during the Reign of Terror was "a majestic assembly, sovereign among all assemblies, founding, organising, representing, above any other human force, the inexhaustible fecundity of nature." Victor Hugo, not to be outdone, says of Assembly—an Assembly, be it remembered, remarkable for grotesque ineptitude and cowardice—it was to all other representative bodies what the *layas* are to other mountains.

But how, indeed, could he be expected to do otherwise? For had not this Assembly helped

Republic," and was not "the Republic" the fetish of his later years? No cavalier, in the good old days, can ever have believed more passionately in the divine right of kings than he believed in the divine right of this particular form of government. It was not, in his mind, a government like any other, applicable or not applicable in a given case, according to a country's history, traditions, circumstances—a government which any country, by the exercise of its volition, might accept or reject at will. It was a government of right as opposed to wrong, a something supreme and absolute, which it would have been blasphemy even to question, a universal panacea for every ill to which political or social man is heir. It meant the realised ideal for which the Revolution had prepared,— "the end of prostitution for woman, the end of starvation for man, the end of night for the child." It meant "brotherhood, concord, dawn." It meant universal peace, and universal benevolence, and the extinction of poverty, and a regenerated world.

Now to all this philosophy of the eighteenth century, and the political and social theories founded upon it, there is but one word to apply, and that word is, ~~and~~ "obsolete." They tottered to their fall under Burke's ~~cl~~, and from the date when Darwin published his work they became things of the past. As soon as ~~the~~ of development had taken possession of men's ~~they~~ became difficult for any really serious thinker man apart from his history, and as a creature ~~they~~ beneficent and good, and only led into evil by ~~they~~ s and institutions. Man has grown to be ~~they~~ own by slow, patient effort, prolonged from

generation to generation, grown by the help of the very institutions which the eighteenth century regarded as the origin of all his woes. He is not, as Rousseau and his school held, a kind of abstract being, under the exclusive guidance of his intellect, who can be divorced from every influence of the past, and trusted to be always reasonable. His past forms part of himself, and his reasonableness mainly depends upon it. Carry him back to a "state of nature," in his remotest days, and you carry him back to the state of the savage, and even worse. Behind the savage there is the brute, far enough removed in history, but lurking all too near to the heart of each one of us, and easily roused, and with difficulty appeased. How idle to suppose that he can be suppressed by cancelling all that has taken place since he held undisputed sway !

And with the crumbling of Rousseau's worm-eaten philosophy, the French Revolution assumes its right proportions as a movement in which the brute in man played an all too important part. The history of 1793 has been re-written for us lately, with an almost superabundance of detail, by M. Taine. It is scarcely a history over which one feels inclined to join in Victor Hugo's hosannas.

While as to "the Republic"—why "the Republic" ^{is} a good form of government enough under certain ^{at} tions. It is a better form of government than the Empire; for it has possibilities of continued ^{vi} di those the Empire never had. But even in Fra^W Victor Hugo held to be the vanguard of the ^{plc} even in Paris, which he considered to be the the human race,—can it be said that eve^W Republic" has brought in its train all tible

anticipated? Is woman's purity more conspicuously honoured there than elsewhere? Is man less subject to poverty and the other ills of life? Is the child treated so exceptionally well? The government of France is doubtless doing its best under difficult conditions. But can we as yet regard it as showing to all governments a brilliant example of "brotherhood" and "concord"? Can it be said to have its being in a rose-flush of perpetual "dawn"?

So I fear that Victor Hugo's claim to be considered as a prophet must be rejected, somewhat sadly. In truth, he was, in one sense, but a "laudator temporis acti." The doctrines which he preached in politics, social philosophy, and religion, were but the Gospel according to Jean Jacques, as Carlyle called it in derision, the Gospel of Rousseau, as it had taken shape in 1793. Apart from the cry for heads, he was the intellectual continuator of Robespierre. From that old wind-withered tree what fruit could be gathered for the healing of the nations?

But, very fortunately for mankind, the truth or falsehood of a great writer's systematised opinions is no measure of the value of his work. Pictures of the most power may be painted on very indifferent canvas, mortal music may be allied to words that are aningless. Who thinks of Godwin's poor thin en watching the unearthly pageant of inbound, and listening to the enchanted Shelley's verse? And similarly, we Hugo's political system, and con a prose writer; and then, if e fault is ours.

Of course, in the enormous mass of his work, there is much that is unequal. His early writings are those of a child. His later writings are often marred by didacticism and tricks of manner. What I have ventured to call the theatrical element in his character not unfrequently gives to his prose and verse a tone of exaggeration, unreality, and violence. But in considering the place he holds in literature, all such faults may fitly be brushed to one side. He should be judged by his best, and that best is not only immense in quantity, but of a quality so excellent that the critic experiences some trouble in adequately speaking of it without falling into what may seem to be hyperbole.

As a novelist he holds rank with the highest. There are two of his books, at least, which the world will not easily let die. One of them, "*Nôtre Dame de Paris*," has been published now for fifty-seven years; the other, "*Les Misérables*," for upwards of a quarter of a century. Neither, whatsoever M. Zola may say, has at all waxed old. There is in each a salt of genius which will for ever preserve it from decay. Vivid powers of description, admirable skill as a narrator, the faculty of creating real characters, and interesting us in their fortunes, the power of marshalling their actions to definite ends, pathos, passion, a noble intolerance of wrong and a style of marvellous richness and brilliancy—all these he displayed in "*Nôtre Dame*" and "*Les Misérables*." What more would you have? They hold an honourable place in the permanent literature of the world.

As a dramatist he takes rank, if not with the very highest, if not on that unapproachable peak where

Shakespeare dwells alone, yet high upon the spurs of the great mountain. Here, again, he displayed excellent gifts of invention, and also a real playwright's instinct for what is scenic and effective. Working for the stage, he adapted himself to its conditions, and succeeded in making an audience accept plays that were in a high sense literature. Then too in his dramas there was room for the display of his supreme gift, his gift as a poet.

And that he was a poet, and a great poet, who shall be bold to question? Speaking lately, in the preface to a dictionary of Victor Hugo's similes, M. Coppée^x says—

“Among all the poets of mankind Victor Hugo is the one who has invented the greatest number of similes, and those the best carried out, the most striking, the most magnificent. . . . He is the greatest lyric poet of all ages.”

Without quite endorsing these superlatives, one may at least claim for him a place in the very first rank of the world's singers. The mere enumeration of the points at which he touched the highest excellence is itself eloquent. As a song writer he has had few equals. His songs have the essential lyric qualities, spontaneous tunefulness, light delicacy of touch,—all that we are accustomed to associate with the flutter and warble of a bird. As a satirist he is direct, trenchant, terrible, a swordsman whose weapon draws blood at every stroke. As a writer of reflective verse—I am not speaking here of the didactic work of his later life—he is weighty and impressive, and, amid all his philosophising, remains a poet. As a narrator, he is singularly lucid and striking, and possesses to the full

^x In my judgment the foremost living French poet.

the story-teller's gift of awakening and retaining interest. By turns sublime and playful, roughly strong and daintily delicate, full of love-passion and a sweet, fatherly tenderness,—he seems to touch at will all the organ stops in our nature. And what regal command over rhymes, rhythms, and metre! what a rich verbal palette! what superb freedom of power in its use! His words are as pigments, and as pigments, if that were conceivable, which appeal to the ear as well as to the eye. They seem to give out at once colour and sound.

Ah, he was more than the prophet or apostle of a narrow sect. And when time has done its worst and best with his work—has disintegrated the quartz and washed away the clay—there will remain a treasure of gold, without which mankind would be appreciably the poorer. He was one of the world's great poets, and his verse will continue through the after-time as a living force, because, while perfect in workmanship, it is broad-based upon the universal human heart, and so eternal.

THE END.

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JOHN P. ANDERSON

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Notre Dame de Paris. 2 vols. Paris, 1831, 8vo. Exceedingly rare. Eleven hundred copies were printed, and composed the first four editions. A smaller edition in 4 vols., 12mo, was published the same year with the same text, but containing four vignettes, two more than the 8vo edition. This edition comprised 2000 copies, and furnished the 5th, 6th, and 7th editions. The 8th, Paris, 1832, 8vo, in 3 vols., which contains a new preface and three new chapters, viz. — *Impopularité, Abbas beati Martini, Cœi tuera cela*, is really the second edition, and forms vols. iii.-v. of the first collective edition of the "Œuvres de Victor Hugo; Romans," published by Renduel.

— Another edition. (*Illustrations Littéraires.*) Bruxelles [1835 ?], 8vo.

— Another edition. Paris, 1836, 8vo. This edition is illustrated with 12 plates designed by Boulanger, Alfred and Tony Johannot, Raffet, Rogier, and Rouarge, and engraved on steel by Lacour, the Brothers Finden, etc. An edition in 3 vols. with the same plates, was published the same year.

— Édition illustrée d'après les dessins de E. de Beaumont, L. Boulanger, Daubigny, etc. Paris, 1844, 8vo. Contains 55 steel engravings, and a large number of wood-cuts.

— Édition illustrée de soixante-dix dessins par Brion, gravures de Yon et Perrichon. Paris, 1865, 8vo.

— Nouvelle édition. 2 tom. Paris, 1876, 8vo.

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—Notre Dame; a tale of the "Ancient Régime" from the French of V. H., with a prefatory notice of his Romances. By the translator [W. Hazlitt]. 3 vols. London, 1833, 12mo.

—The Hunchback of Notre Dame. Translated, with a sketch of the life and writings of the author, by Frederic Shoberl. A new edition, revised. (*Standard Novels*, No. 32.) London, 1833, 8vo.

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—La Esmeralda; or, the Hunchback of Notre-Dame. London [1844], 8vo.

—Hunchback of Notre Dame (*Parlour Library*, vol. cli.). London [1857], 8vo.

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One of a series entitled "The Library of World-wide Authors."

—Notre-Dame; or, the Bell-ringer of Paris. With illustrations. London [1885], 8vo.
Quatrevingt-treize. [A novel.] 2 tom. Paris, 1874, 12mo.

—Another edition. Paris [1877], 8vo.
First illustrated edition.

—Ninety - Three. Translated by F. L. Benedict and J. H. Friswell. 3 vols. London, 1874, 8vo.

Notre Dame de Paris. Another edition. London [1885], 8vo.

—“Ninety - Three.” Translated by Sir G. Campbell. London [1886], 8vo.

Le Rhin. Lettres à un ami. 2 tom. Paris, 1842, 8vo.

—Nouvelle édition. Augmentée d'un volume inédit. 4 tom. Paris, 1845, 8vo.
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—Excursions along the Banks of the Rhine. London, 1843, 8vo.

—The Rhine; from the French, by D. M. Aird. London, 1843, 12mo.

—Another edition, etc. London, 1853, 8vo.

Les Travailleurs de la Mer. 3 tom. Paris, 1866, 8vo.

—Les Travailleurs de la Mer. Illustrations de Daniel Vierge. Paris, 1876, 8vo.
Contains sixty-three woodcuts.

—Nouvelle édition. Illustrée. Paris, 1883, 4to.

—Les Travailleurs de la Mer. Adapted for use in schools, with notes, life, etc. By J. Boileau. London, 1887, 8vo.

—Toilers of the Sea. Authorised English translation, by W. Moy Thomas. 3 vols. London, 1866, 8vo.

—Another edition. Two illustrations by G. Doré. London, 1867, 8vo.

—Another edition. London, 1870, 8vo.

—Another edition. London, 1886 [1885], 8vo.

William Shakespeare. Paris, 1864, 8vo.

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IV. DRAMATIC WORKS.

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— Another edition. 6 vols. Paris, 1858, 12mo.

— Another edition. 4 vols. Paris, 1867, 12mo.

— Angelo, tyran de Padoue, drame. Paris, 1835, 8vo.

— Another edition. Paris, 1846, 8vo.

— Angelo: a tragedy [in four acts]. Rendered into English blank verse; with notes and some prefatory remarks on French dramatic poetry, by E. O. Coe. London, 1880, 8vo.

Les Burgraves, trilogie. Paris, 1843, 8vo.

Cromwell, drame [in five acts, and in verse]. Paris, 1827, 8vo.

— Another edition. Paris, 1841, 12mo.

La Esmeralda, opéra en quatre actes, musique de Mlle. Louise Bertin, paroles de M. V. Hugo, etc. Paris, 1836, 8vo.

Hernani, ou l'honneur Castillan, drame [in five acts and in verse]. Paris, 1830, 8vo.

— Another edition. Paris, 1846, 8vo.

— Hernani, drame en cinq actes [and in verse]. With explanatory notes, by G. Masson (*Le Théâtre Français du XIXe siècle*, No. 1). London [1876], 8vo.

— Catherine of Cleves, and Hernani: Tragedies, translated from the French of Mr. Alexandre Dumas and Mr. Victor Hugo, by Lord Francis Leveson Gower. London, 1832, 8vo.

Lucrèce Borgia, drame. Paris, 1833, 8vo.

— Another edition. Paris, 1846, 8vo.

— Lucretia Borgia; a dramatic tale, translated from the French of V. H., by W. T. Haley. (*The Romancist*, vol. v., N.S.) London, 1842, 8vo.

Marie Tudor, drame. Paris [1833], 8vo.

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Marion de Lorme, drame [in five acts and in verse]. Paris, 1831, 8vo.

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Le Roi s'amuse, drame [in five acts and in verse]. Paris, 1832, 8vo.

— Another edition. Paris, 1846, 8vo.

— Le Roi s'amuse. [A drama in five acts and in verse. Illustrated by H. Meyer, A. Marie, and others.] (*Détail du procès du Roi s'amuse. Notes et Variantes de l'édition définitive, etc.*) Paris, 1883, 4to.

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Ruy Blas, drame en cinq actes. Paris, 1838, 18mo.

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Discours prononcés à la Chambre des Pairs, à l'Assemblée nationale et au Congrès de la paix. Paris, 1851, 8vo.

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Le Christ au Vatican, suivi de la Voix de Guernesey. Bruxelles, 1868, 32mo.

—Christ and the Vatican. Translated from the French by G. Schlatter. With notes by the translator. Second edition. London, 1875, 16mo.

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V. MISCELLANEOUS.

Adolphe Pelleport. Tous les Amours, avec une lettre de Victor Hugo, etc. Paris, 1882, 18mo.

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Mémoires de Garibaldi par Alexandre Dumas, précédés d'un discours sur Garibaldi par Victor Hugo, etc. Bruxelles [1860], 8vo.

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Paris-Guile par les principaux écrivains et artistes de la France. [Introduction by V. Hugo.] 2 pt. Paris, 1867, 12mo.

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Raccolta di lettere del Generale Garibaldi indirizzate a M. A. Sammuto, precedute da due di F. D. Guerrazzi e continuata da altre di V. Hugo, etc. Milano [1882 ?], 8vo.

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very poor. I hope mine is not all gone, for if the French gentlemen who have so kindly undertaken the task of special providence to the copper market will only perform that office a few years, they will enable me to carry out all the plans I ever dreamed of, before I am too old to carry them out myself. And I trust that at any rate they will enable me to go ahead within reasonable time and explore the Gulf Stream on my own account and not be dependent upon the aid of Government, which, as you know, I look upon as the worst kind of assistance. The new Fish Commissioner has tried to do his best to continue to extend to naturalists the facilities of the Wood's Hole Station, but Congress has drawn a line through the bulk of his appropriations for that purpose, and our expenditures are so well arranged that it may be the end of the summer before the money for the season is available.

The present heads of Government scientific bureaus at Washington are starting a crusade for a great National University to have its seat there. It may do very well for a beginning, but after ten or fifteen years no Professor would be anything but a political demagogue, and it would be the worst thing for science and the existing Universities — of which there are too many already — to have official science get a stronger foothold and have greater influence than it already has. It has killed all individuality in Geology, the Professors of Geology in the United States being, with few exceptions, the satellites of the Director of the Geological Survey of the United States. I hope to get back to Cambridge towards the middle of November and you may see me drop in upon you in January on my way somewhere.

He spent the winter of 1888-89 in northern Africa, accompanied by his second son Maximilian, who, having just left Harvard, went with his father on most of his later wanderings. The two made ideal travelling companions, the calm placidity of the son acting as an excellent foil to the occasional nervous impetuosity of the father.

Agassiz's letters of this winter cover what is now such well-worn ground that, except for a few extracts, they would be out of place here; writing from Constantine, he says: "The scenery so far, from Tunis to Constantine, is pretty, but tame and not worth seeing to one who has travelled as much as I have; were I alone I should give up the whole thing at once and go home, — it's not worth the journey. But Max enjoys it immensely and he is first-rate company travelling, always cheerful and pleased and satisfied."

The following may be interesting as showing a scientific man's impression of the desert: —

BISKRA, Feb. 7, 1889.

"My visit to this place has been most satisfactory and I think I have found out what has been the former conditions of the desert, much to my satisfaction at least. I never liked greatly the various explanations which had been given of the formation of the desert, and I think I have seen the whole thing and can explain most naturally what now exists on the Sahara from what I saw along the line of the railroad, on the high plateaus, the Hondas, as they are called, on the way to Biskra. I drove this day about twenty miles into the desert to an oasis called Sidi Ocka, and on the way there got all the evidence I wanted that my explanation was at least

far more reasonable than any other I had seen, calling upon great elevation and all kinds of cataclysms to explain what seems to me a most simple thing. The whole phenomenon is very much like that which has caused our Great Salt Lake Basin and the Sinks of Nevada and Idaho and Utah and that part of the West.

I have been greatly interested in the few days I have spent here and they have fully repaid me, and I dare say if I don't see much I shall at any rate get an excellent idea of the physical geography of Northern Africa, which is certainly very different from that of any other region I have seen. The oasis here is an interesting one, and the life of the Arabs on the desert in their tents and with their herds of camels and of goats and sheep is much like what I saw on the Nile, only here they are in their element. As for the Arab villages they are all alike, mud walls, low houses, narrow streets, filthy as can be, and here and there squares planted with date palms, oranges and lemons, which relieve the scene. The Arab dress is very monotonous, — like the desert you see nothing but their gray cloaks; occasionally a gaudily dressed woman on the doorsteps with her silver bangles and rings and necklaces. The bazaars of this little place and of the Arab villages we have seen are not very gaudy, but at any rate they have not been contaminated by French influence, as at Tunis or Constantine, where they are no longer characteristic. Still even here the goods for sale are gradually becoming the very flimsiest of European make in competition with the hand-made native work. There are in a store here plenty of reptiles and insects for sale, but so badly preserved that I do not care to get any."

On his return to Cambridge he writes: "I come back in good order, but how long I will remain so remains to be seen. I greatly fear that I have reached the stage where I am well only when I do nothing, and that is not a very agreeable prospect for an active individual like me."

In the fall, Agassiz was offered charge of the section of Marine Zoölogy on the U.S.S. Pensacola, which conveyed the U.S. Eclipse expedition to West Africa, the idea being to dredge from the Equator to the Cape, while the astronomers were at work on land. Unfortunately, he was asked to join the expedition at so late a date that he found it impossible to fit out the vessel in time unless he could transfer the Blake equipment to the Pensacola; this, owing to red tape, he was unable to do.

TO HUXLEY

CAMBRIDGE, Jan. 14, 1890.

We were very sorry not to be able to have your son to stay with us while he was in Cambridge. But I have been laid up with a most obstinate fever since the beginning of December and am only allowed now to see one or two people and to write an occasional note. Fortunately, your son fell into good hands and I hope he will be able to do what he has planned. But it needs good backing from a few rich parents in New York, and with that he is safe. Most of the schools, such as he proposes to establish, are under the wing of some denomination, but there is plenty of liberal spirit to support an entirely unsectarian affair.

My fever has upset all my plans for work for this winter. I came back from the West feeling particularly well and hoped for a steady working winter. I was specially interested in working up the material of a most

interesting new stalked Crinoid, closely allied to *Apioerinus*, and one of the most interesting finds from the deep sea. It was collected by the Albatross—Fish Commission steamer—off one of the Galapagos. Of course all this is hung up to my great disgust, and the doctor says it will be fully a month before I can hope to be at work regularly again.

I was glad to hear you had cast the dust of London from your feet and were quite well again in your new home in the country and able to do quite as much work as you like. By the way, a few days before I knocked off work, Murray wrote me he should only publish one more volume of the Challenger, and a supplementary number containing your Memoir on *Spirula*. If you have quite done with my specimen I should be glad to have it again. The best way of shipping it would be to put the bottle in a small box and leave it at the London office of the Cunard Line, asking them to send it to *Boston* by their first steamer.

By the spring of 1889, the façade of the Museum building had been completed, with the exception of the corner piece. Except for the sections of botany and mineralogy, built by subscriptions collected with Agassiz's help by Professors Goodale and Cooke, nearly all the building and the publications, as well as most of the collections in the Museum of Comparative Zoölogy proper, had been, since the death of his father, at Agassiz's expense.

Dr. Brown-Séquard, an old friend of the family, in writing to Agassiz about this time says: "I am very glad, indeed, that you are carrying out so fully the grand ideas of your father as regards the Museum. When you

have accomplished that great work, Cambridge will be a unique place in the world for such a *natural* systematic display of the animal creation. When steamships can cross the Atlantic in four days, I expect that European Naturalists will go and study your father's plans and views as exhibited in this Museum, whose existence will be due to your exertions and liberality."

It had always been Agassiz's aim to build up a museum that would above all things furnish facilities for original investigation and advanced work, and his efforts were constantly directed toward that end. It was now becoming apparent that the resources of the Museum were being more and more absorbed in undergraduate instruction, for which they were never intended. This often led him to take a dark view of his work for the Museum, and to wish that the time he had spent in its interests had been used in other directions. Such feelings grew with the advancing years, and his correspondence abounds in passages similar to the following extract from a letter of somewhat later date to Professor F. Jeffrey Bell, of the British Museum:—

" Since Fewkes left the Museum we have had no specialist for Radiates, and hence all I can send you is a small piece of *Titanideum suberosum* from Stono Inlet, South Carolina. I picked this off from one of the specimens on exhibition. I don't quite see what is to become of us. I am sick to death of supplying the means of running a big machine, when I have so much better use for them in explorations and publications. After twenty years of playing a lone hand, I shall some fine day clear out and burn my ships behind me. I have no doubt there is no end of this material in the Museum

(Titanideum), but there is not a single person who knows the Alcyonarians enough to pick out anything, and I am out of the question for any such work. Sorry to treat you so shabbily."

With all his varied interests he had found time to devote himself to his *Alma Mater* in many ways besides looking after the Museum. When Professor Pickering was appointed Director of the Observatory, Agassiz raised a fund which served as the basis of establishing the department of Astronomy on its present footing. And it was through his influence that the generosity of Mr. T. J. Coolidge took the form of founding the Jefferson Physical Laboratory.

From 1878 to 1884, Agassiz had been a member of the Corporation, a body that controls the affairs of the University. He resigned on the plea of not being able to devote sufficient time to its duties, but in 1886 he again accepted the position, feeling he could not resist the pressing invitation to serve once more. Of his appointment he writes: "I hope you will not pitch into me for having rejoined the Corporation. The fact is, I could not say no. I have got through my Blake—Calumet responsibility is well off my hands through Mr. ——; I am getting too old to do much more work of my own, and this is the simplest way of helping others and doing my share of public work in something I know all about."

It will be noticed that the man who accepted the position on the Corporation because he was too old to do much more work of his own had still most of his scientific expeditions ahead of him; and as for Calumet responsibility being well off his hands, he writes from

there about this time: "I am as usual taking time by the forelock, and looking ahead a few hundred years and laying out more work. It will soon pay the Calumet stockholders to pay me \$100,000 a year to stay at home!! I am going underground to-day and to-morrow, and on what I see will depend plans for the future."

During Agassiz's connection with the administration of Harvard his efforts were directed toward moulding it more on the lines of a German university. He was especially interested in attempting to remedy what is still to-day a crying evil in most of our American universities, the lack of their professors of sufficient time for research work. So strongly did he feel in this matter that, under certain conditions, a considerable portion of his estate may eventually revert to the founding of research professorships in connection with the Museum. He also exerted his influence toward abolishing a classical education as the only and compulsory method of obtaining a degree; but he was one of the first to regret that a liberal curriculum led more and more to the introduction of technical instruction in the older universities, a danger which was clearly pointed out to him by Charles Eliot Norton.

TO C. E. NORTON

A few days ago I received the rank list of the Freshman Class and find it as I expected a fine example of the working of the present rules of the College Faculty.

B——, for example, stands on the rank list in six out of nine subjects, and well up in three of them, but he is notified he cannot get his degree if he does not get a certain per cent in Greek.

If a boy's work is to be judged by percentages, let

him at least get the benefit of it in the things in which he does well. The present system is eminently calculated to discourage a boy from doing well in any one thing; if he can scrape through poorly in all, he is safe. If he has a taste for a study and does remarkably well, then it is useless unless he can manage to do a certain amount in something for which he may be totally unfitted. I most decidedly object to any one department, I do not care what it is, laying down the law as is now done that unless a boy does such a per cent in a study he shall not get his degree, and if he does not do well in a couple, he may be dropped. In the present state of learning this is an intolerable assumption, and one which is sure to react on Cambridge by leaving the men who are educated there entirely out of the tide of what is going on, and tending to make prigs of them. It will most assuredly tend to alienate the good will of the friends of the college, if they find that the regulations are such that they cannot educate their sons (of average capacity) there unless they manage to imbibe something which they cannot possibly assimilate. We want to find out what is in a boy and give him a chance to show it. We do not want to judge him by what he cannot do, but by what he accomplishes. He is measured so in after life, and he must be the judge of the course he takes.

The sooner the educators of the country recognize the fact that at 16 to 18 a boy's brain will do some things and not others, the better; and furthermore that all brains are not alike and never will be, and cannot up to that time be developed alike, nor in the same direction.

A boy who shows aptitude in one line of study ought to have the chance to remain in Cambridge and get his degree. This is eminently just. Comparatively recently

all that was required was the literary side of education for such a degree. I now ask that the scientific side have the same chance. I do not want to interfere in any way in that direction, but I do not want the literary side to dictate terms, which if dictated by the scientific side would deprive nine tenths of the students of their degree, and yet we might not be asking more than you think every well-educated man should know.

This is to me a most serious matter. I have fought in vain to obtain recognition thus far ; but those who feel as I do are numerous, they are many of them warm friends of the college, and something must be done to satisfy one half of the patrons of the college.

Excuse this long epistle, it may be worded somewhat dogmatically, but I must acknowledge that since I have had anything to do with college matters I have never felt so hopelessly helpless as when attempting to attack the circumlocution office of Faculty — Overseers — Corporation.

Agassiz frequently said that the idea that a classical education was the only education was a survival of the days when, if a boy was to be taught anything, the only people who could do it were the monks who knew nothing but the dead languages. He did not deny the value of a classical training, but maintained that an equally good one could be given by other methods, to boys whose tastes lay in different directions ; and greatly resented the assumption of the classical scholar, who calmly assumed that the scientific man was uneducated unless he was on familiar terms with the classics, while he himself was most probably ignorant of the causes of the simplest things happening about him.

In 1890, finding himself more than ever out of sympathy with the administration of the University, feeling that his influence had not accomplished what he had hoped, and especially that the wider interests of the University were being sacrificed to the undergraduate department, he again tendered his resignation from the Corporation. In a letter to his old friend, Mr. John Quincy Adams, also a member of the Board, explaining his reasons for this action, Agassiz says: "I might go on indefinitely, and show you that we are very nearly at the same stage as when we began to take an interest in the College. That is the discouraging part for a man who is accustomed to accomplish something."

TO CHARLES W. ELIOT

NEWPORT, June 1, 1890.

While I fully appreciate the consideration shown me by the Corporation in laying on the table my proposition to be on the lookout for my successor, and will not press my resignation at this moment, it does not change my view of the position. It is impossible for me to be hereafter much more than a dummy in the Corporation. I am carrying altogether too much sail, and am unfortunately too much of a foreigner to take things as they come, and cannot help taking things to heart so far as to produce a state of mind wasteful in the extreme, both of energy and time. I have allowed my interest in Cambridge completely to overshadow my own plans and have been drawn little by little into a position which is no longer tenable. Put yourself in my place.

1. I am expected to run the largest Department of the College with the exception of the Observatory.
2. To supply the means practically for doing this.

3. To run the machine which gives me the means of so doing.

4. To carry on my own scientific work.

Most men are satisfied to do any one of 1, 3, 4, and you must add the Corporation to this. It is true I have stopped 2, practically. But to carry on my own scientific work I must of necessity continue in charge of 3 (Calumet). I must find relief somehow, and the only thing to do at my age is to withdraw from the Corporation — and do the same from the Museum as soon as it is free of debt, and a suitable Curator can be found, or as soon as my plans are matured for leaving Cambridge, making my steamer my headquarters for the winter and Newport for the summer. I have done my share for the public and propose now to retire and do a little at least of what interests me most.

Notwithstanding the amount of time, from 1881 to 1890, which Agassiz devoted to the executive work of the mine, the Museum, and the University, to say nothing of his enforced winter absences in search of health, his writings during that period number no less than fifty-nine titles. While many of these were of course short articles, some of the more important publications were "Three Cruises of the Blake," — "Blake Echini," "Coral Reefs of the Hawaiian Islands," and a number of papers on the embryology and development of bony fishes.

CHAPTER XI

1891

THE FIRST ALBATROSS EXPEDITION

AGASSIZ had always been most anxious to supplement his work on the Blake in the Caribbean, by an expedition in the Panamic region of the Pacific. For it was well known that the littoral fauna of these two localities bore a striking resemblance. This led him to believe that a comparison of the deep-sea forms on the Pacific side of the Isthmus of Panama with his old friends in the Caribbean would furnish reliable data for some most interesting conclusions. If he could establish geologically the approximate period at which the Caribbean ceased to be a bay of the Pacific, he hoped to be able to determine the amount of change that had taken place between the deep-sea fauna on each side of the Isthmus, since the passage connecting them had ceased to exist.

Already he had been twice disappointed in his hope of undertaking such an expedition. In 1879, he was invited by Admiral Belknap to join his flagship off Panama and undertake a deep-sea cruise; unfortunately the breaking-out of the war between Peru and Chile made this expedition impossible. Again in 1888, business matters prevented his accepting an invitation to join the Albatross at Panama, on her way from New York to San Francisco.

In 1890, he was asked by Colonel Marshall MacDonald, the United States Fish Commissioner, to take charge of

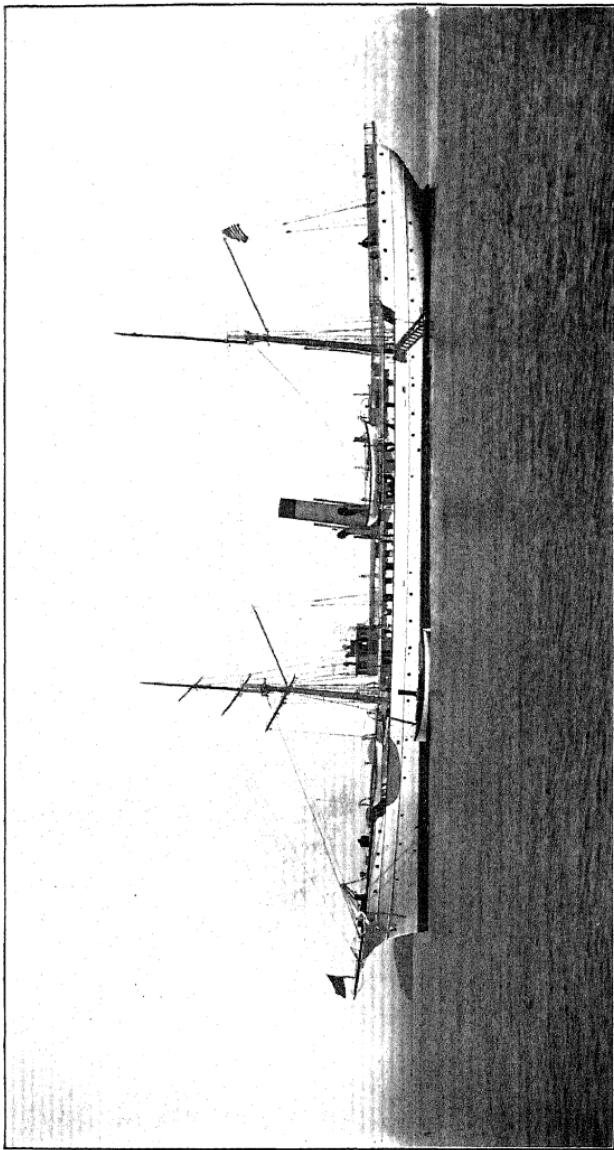
a deep-sea expedition off Panama the following year in the Albatross. The conditions under which Agassiz was offered the ship included his supplying the coal, assisting in thoroughly reequipping the boat, and paying part of the running expenses. In return he was to get a first set of the collections which especially interested him. The result of the arrangement was, that this and his subsequent expeditions in the Albatross were little if any less expensive to him than the expeditions he undertook later without government aid.

The Albatross was built in 1882 especially for the use of the United States Fish Commission. She was 234 feet over all, 200 feet on the water-line, with a beam (moulded) of 27 feet 6 inches. At 12 feet draught, she displaced a trifle under 1100 tons. Her engines had an indicated horse-power of a shade over 450, and she was fitted with twin screws. She was furnished with a very complete marine laboratory; and when reequipped for this expedition possessed all the most approved devices of the day for the investigation of the ocean. Her officers were detailed from the United States Navy; her captain, Lieut.-Commander Z. L. Tanner, having been in charge ever since her first cruise. From 1883 to 1886, she worked for the Fish Commission along the Atlantic coast. In 1887, she left for the Pacific, sounding and dredging along her route; and in 1890, she was sent to Bering Sea to investigate the seal fisheries.

In January, 1891, with the consent of the President, the Albatross was ordered to Panama. Agassiz left New York on February 10, taking with him Mr. Magnus Westergren, who was to act as artist of the expedition.

On reaching Panama, after crossing the Isthmus, where the French were at work on the canal, he writes:—

THE ALBATROSS



“ It seems quite natural for me to be here again in the same old hotel where I have so often stopped and with the same landlord who was here in 1859, when I first passed through on my way to California, and who has been here ever since. He seemed quite pleased to see me again and has made me as comfortable as one can be in a combination of a French-Spanish mansion.

“ The canal can be fairly seen from the line of the railroad, and it is really frightful to see the waste; the whole length of the line is one long village, houses for the men, and all along you find dredges by the half-dozen laid up and going to pieces, and in a few localities every ten miles or so there is an entrepôt with miles of machinery, much of which has never been used, and no less than six large steamers have returned to Europe filled with the wrecks which could be still used elsewhere. There has been much less work done than I imagined, judging from the money spent; it was generally supposed that nearly one-third was done, but I hardly think there is one-tenth of the work finished. They have, it is true, some twenty-five miles of canal in the plains at the two ends well advanced, but the real work of cutting consists only of a few scratches, nowhere more than twenty feet below the railroad !

“ I go on board the Albatross this P.M., and we start to-morrow. The working accommodations are fine, an upper room twenty by twenty for rough work and general laboratory, and a second floor below for storing the collection in racks — we ought to do well. My cabin is nine by eight; I have a closet to hang things, about twelve good-sized drawers under my bunk and in a bureau, and I keep one of my trunks to stow away stuff, a couple of shelves and hooks, and you have my equip-

ments. My cabin opens out into a good-sized dining-room and sitting-room of about twelve feet by the width of the ship, where Tanner and I sit and take our meals. It has large portholes, a fine skylight, and is very airy and comfortable. Strange to say, it has the desk and sideboard which were on the *Hassler* when Father made his trip from New York to San Francisco in 1871-72!"

The first trip (see Chart 2 in the back cover) was a sort of preliminary trial to test the apparatus; the ship left Panama on February 22, and returned after an absence of twenty days. On leaving Cape Mala, which marks the western entrance to the Bay of Panama, she proceeded to Cocos Island, over four hundred miles to the westward, and from there made a broad sweep to Malpelo Island, about three hundred miles to the eastward, and back to Panama. Some idea of what was done on the initial cruise can be gathered from a letter to the Fish Commissioner, written after reaching Panama.

TO MARSHALL MACDONALD

ON BOARD THE ALBATROSS,
March 14, 1891.

I have found, in the first place, a great many of my old West Indian friends. In nearly all the groups of marine forms among the Fishes, Crustacea, Worms, Mollusks, Echinoderms, and Polyps, we have found familiar West Indian types or East Coast forms, and have also found quite a number of forms whose wide geographical distribution was already known, and is now extended to the Eastern Pacific. This was naturally to be expected from the fact that the district we are exploring is practically a new field, nothing having been done except

what the Albatross herself has accomplished along the west coast of North and South America. The Challenger, as you will remember, came from Japan to the Sandwich Islands, and from there south across to Juan Fernandez, leaving, as it were, a huge field of which we are attacking the middle wedge. As far as we have gone, it seems very evident that, even in deep water, there is on this west coast of Central America a considerable fauna which finds its parallel in the West Indies, and recalls the pre-Cretaceous times when the Caribbean Sea was practically a bay of the Pacific. There are, indeed, a number of genera in the deep water, and to some extent also in the shallower depths, which show far greater affinity with the Pacific than with the Atlantic fauna. Of course, further exploration may show that some of these genera are simply genera of a wider geographical distribution ; but I think a sufficiently large portion of the deep-sea fauna will still attest the former connection of the Pacific and the Atlantic.

I am thus far somewhat disappointed in the richness of the deep-sea fauna in the Panamic district. It certainly does not compare with that of the West Indian or Eastern United States side. I have little doubt that this comparative poverty is due to the absence of a great oceanic current like the Gulf Stream, bringing with it on its surface a large amount of food which serves to supply the deep-sea fauna along its course. In the regions we have explored up to this time, currents from the north and from the south meet, and then are diverted to a westerly direction, forming a sort of current doldrums, turning west or east or south or north according to the direction of the prevailing wind. The amount of food which these currents carry is small com-

pared with that drifting along the course of the Gulf Stream. I was also greatly surprised at the poverty of the surface fauna. Except on one occasion, when during a calm we passed through a large field of floating surface material, we usually encountered very little. It is composed mainly of *Salpæ*, *Doliolum*, *Sagittas*, and a few *Siphonophores*,—a striking contrast to the wealth of the surface fauna to be met with in a calm day in the Gulf of Mexico near the Tortugas, or in the main current of the Gulf Stream as it sweeps by the Florida Reef or the Cuban coast near Havana. We also found great difficulty in trawling, owing to the considerable irregularities of the bottom. When trawling from north to south, we seemed to cut across submarine ridges, and it was only while trawling from east to west that we generally maintained a fairly uniform depth. During the first cruise we made nearly fifty hauls of the trawl, and in addition several stations were occupied in trawling at intermediate depths. In my dredgings in the Gulf of Mexico, off the West Indies, and in the Caribbean, my attention had already been called to the immense amount of vegetable matter dredged up from a depth of over fifteen hundred fathoms, on the lee side of the West India Islands. But in none of the dredgings we made on the Atlantic side of the Isthmus did we come upon such masses of decomposed vegetable matter as we found on this expedition.

Cocos Island is only about two hundred and seventy-five miles from the mainland, and its flora, so similar to that of the adjacent coast, tells its own story.¹ Malpelo, on the contrary, which is an inaccessible rock with vertical sides, and destitute of any soil formed from the disinte-

¹ See page 255, second paragraph.

gration of the rocks, has remained comparatively barren, in spite of its closer proximity to the mainland.

The most interesting things we have found up to this time are representatives of the Ceratias group of Fishes, which the naturalists of the Albatross tell me they have not met before on the west coast of North America. The Crustacea have supplied us with a most remarkable type of the Willemoesia group. The paucity of Mollusks and also of Echini is most striking, although we brought up in one of the hauls numerous fragments of what must have been a gigantic species of *Cystechinus*, which I hope I may reconstruct. We were also fortunate enough to find a single specimen of *Calamocrinus* off Morro Puercos, in seven hundred fathoms, a part of the stem with the base, showing its mode of attachment to be similar to that of the fossil *Apiocrinidæ*. The number of Ophiurans was remarkably small as compared with the fauna of deep waters on the Atlantic side, where it often seems as if Ophiurans had been the first and only objects created. The absence of deep-sea corals is also quite striking. They play so important a part in the fauna of the deeper waters of the West Indies, that the contrast is most marked. *Gorgoniae* and other *Halcyonoids* are likewise uncommon. We have found but few Siliceous Sponges, and all of well-known types. Starfishes are abundant, and are as well represented in the variety of genera and species as on the Atlantic side of the Isthmus. I may also mention the large number of deep-sea Holothurians (*Elasipoda*) which we obtained, as well as a most remarkable deep-sea Actinian, closely allied to *Cerianthus*, but evidently belonging to a new family of that group. We found the usual types of deep-sea West Indian Annelids, occasionally sweeping

over large tracts of mud tubes in the region of green mud. Although we dredged frequently in most characteristic Globigerina ooze, I was much struck with the absence of living Globigerinæ on the surface. Only on two occasions during a calm did we come across any number of surface Globigerinæ and Orbulinæ. On one occasion the trawl came up literally filled with masses of a species of Rhabdammina closely allied to *R. lineata*. Thus far no pelagic Algæ have been met with.

I can hardly express my satisfaction at having the opportunity to carry on this deep-sea work on the Albatross. While of course I knew in a general way the great facilities the ship afforded, I did not fully realize the capacity of the equipment until I came to make use of it myself. I could not but contrast the luxurious and thoroughly convenient appointments of the Albatross with my previous experiences. The laboratory, with its ingenious arrangements and its excellent accommodations for work by day and night, was to me a revelation. Mr. Westergren has found his time fully occupied, and we have in this trip brought together a considerable number of colored drawings, giving an excellent general idea of the appearance of the inhabitants of the deep waters as they first come up. These drawings can be used to great advantage with the specimens in making the final illustrations to accompany the reports of the specialists who may have charge of working up the different departments.

While coaling and making some slight repairs he writes: —

“The Albatross is an excellent sea boat and she rides the sea wonderfully well, and really much better than

many a large ocean steamer I have been on. We have done about as much work these eighteen days as I did on the Blake on my first cruise. You can have no idea how comfortable the trip has been. The quarters I share with the Captain are very spacious and in this hot weather it makes a great difference not to feel cramped. The accommodations for work and for taking care of the collections are excellent: There are two men to help to put them aside, a Mr. Townsend, who is called the naturalist of the ship and who is the most obliging and hard-working man imaginable, and a Mr. Miller, the chemist, who gets all the needed preparations ready and also helps to put up the things, so that I have a chance to spend what time there is between the dredgings and, while the things are being sorted, to examine them and make notes and superintend Westergren. We shall hardly get away from here before the 20th, as there are two ships ahead of us for coal and our repairs may take the greater part of the time till our turn comes. While coaling ship I shall live on shore and go on line of the railroad with the doctor of the old Canal Company. I have also an invitation to spend the day at the plantation of a Mr. Erman, who is the principal banker here. This plantation is about fifteen miles from Panama near one of the most interesting parts where the work was done on the Canal. He seems to have seen a good deal of Father and of the Hassler people while they spent three weeks at Panama, and says I shall find on the plantation a good many people who are old acquaintances of the Hassler. Captain Tanner has been perfectly indefatigable; he is indeed a model Captain for such a trip. We begin at 5 A.M. and keep it up till 10 P.M. My patent intermediate net was a fail-

ure, but Captain Tanner and I rigged up a new machine which has worked to perfection and shows plainly that there is *no intermediate fauna* as I have always stuck to. But using the net deep down just above the bottom, say one hundred fathoms, I have brought up some interesting things, and have also found some *good things* by towing at two hundred fathoms only in deep water and have caught as surface things, which go down in the day or when it blows, many of the so-called deep-sea things."

On leaving Panama for the second time, the Albatross proceeded to Galera Point, about four hundred miles from Panama Bay, on the coast of Ecuador; from here she ran a line across the Humboldt Current as far as the south face of the Galapagos, something over five hundred miles to the westward of Galera Point. After visiting the islands the ship worked her way to Acapulco.

When once well out at sea the work of the expedition settled down to its regular routine. The day's programme began with a sounding, often before six, but sometimes, after a hard day, it was not taken till the change of the watch at eight o'clock. Then the whirr of the machine on the poop deck overhead could be heard buzzing away merrily while Agassiz and the Captain were at breakfast. As soon as the bottom sample, a tube full of abyssal ooze, reached the surface, it was taken to the laboratory amidships. While Agassiz was examining this, the great dredging boom was swung out to starboard, the big Blake trawl was lowered away, and the ship lay to while the three or more miles of wire rope sometimes necessary to drag it along the bottom was slowly paid out; then the vessel steamed ahead

slowly, while Agassiz occasionally left his work in the laboratory to note the strain on the tackle recorded on a dial. After a time the vessel was again stopped, and the long tedious process begun of reeling in what appeared to be an endless line of cable. The incessant monotony of the *clank, clank*, of the reeling engine was punctuated by an occasional sharp vibrating jar, as a sudden roll of the ship brought an extra strain on the gear. Meanwhile in the laboratory, Agassiz and his assistants were busy sorting what remained of the hauls of the previous day, preserving the specimens and preparing them for storage in the racks in the lower laboratory.

As soon as the catch arrived on board, all was bustle, activity, and excitement. The contents of the bag, a mass of ice-cold ooze, was turned into sieves and washed down under spray, while Agassiz, eager as a boy, inspected each fresh revelation from the silent depths of the sea. Again the work of sorting and preserving the specimens continued under Agassiz's supervision in the laboratory, some of the more delicate being turned over to Westergren to sketch. There were usually three or four dredgings a day. Often the last haul did not come on board till after dark, sometimes as late as ten or eleven o'clock, when they were handled by the help of the deck lights.

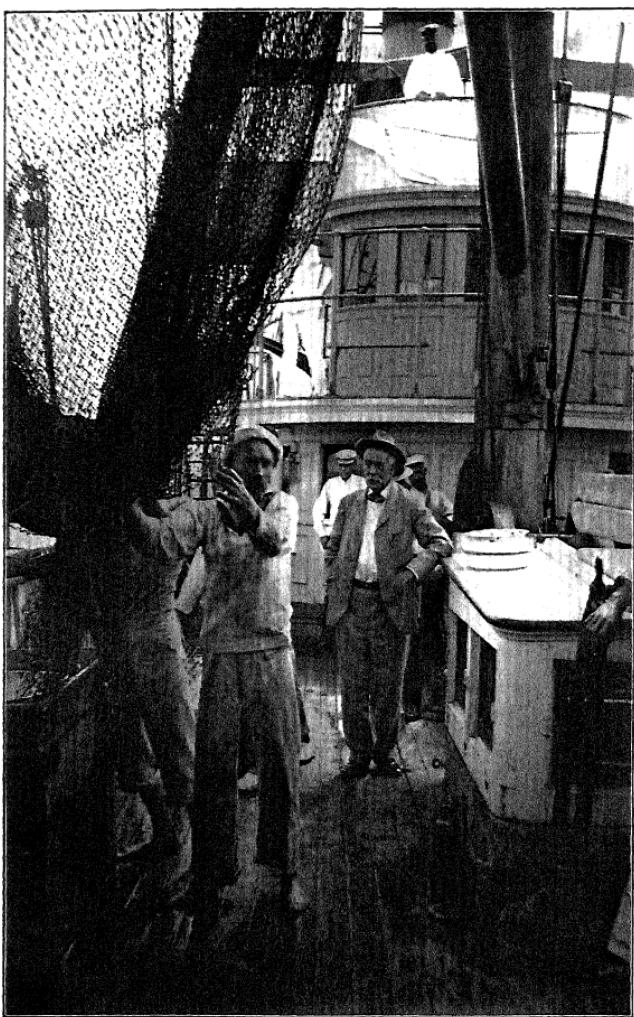
While the trawl was dragging slowly over the bottom, a surface tow net was sent overboard on one of the lower booms. If this haul proved interesting, the ordinary routine would be interrupted, and the huge intermediate tow net, substituted for the trawl, would be sent down, often three or four times, if the surface towings showed abundance of life.

On very still nights the surface net was in use till late into the night, while Agassiz examined, in glass bowls held directly over an electric light, the catch of minute pelagic forms. At every anchorage electric lights were put into the water at night to attract the surface fauna. This furnished sport for the sailors, who fished up the prey with long-handled gauze dip nets. Agassiz's attentive consideration of all the specimens brought to him by the men served to keep up their interest, and the amount of pelagic material thus collected was considerable.

After reaching the Galapagos, writing to Colonel Mac-Donald of the line across the Humboldt Current he says: "With the exception of three good casts the trawling on that part of the sea bottom proved comparatively poor."

He must, however, have been thinking at the time of some of the wonderfully rich ground he had dredged in the Blake, for the letter continues: —

"In the deeper parts of the channel between Galera Point and the southern face of Chatham Island we found a great number of *Elasipoda*, among them several genera like *Peniagone*, *Benthodytes*, and *Euphronides*, represented by numerous species. The Starfishes of this our second cruise did not differ materially from those collected during our first trip, but we added some fine species of *Freyella*, *Hymenaster*, *Astrogonium*, *Asterina*, and *Archasteridæ* to our collection. Among the Sea-urchins on two occasions we brought up fine hauls of a species of *Cystechinus* with a hard test, many specimens of which were in admirable state of preservation." And so on through a list of the Ophiurans, Gorgonians, crustaceans, worms, mollusks, fishes, etc.



EMPTYING THE TRAWL

“Arriving as we did at the Galapagos at the beginning of a remarkably early rainy season, I could not help contrasting the green appearance of the slopes of the islands, covered as they were by a comparatively thick growth of bushes, shrubs, and trees, with the description given of them by Darwin, who represents them in the height of the dry season as the supreme expression of desolation and barrenness. Of course here and there were extensive tracts on the seashore where there was nothing to be seen but blocks of volcanic ashes, with an occasional cactus standing in bold relief, or a series of mud volcanoes, or a huge black field of volcanic rocks, an ancient flow from some crater to the sea ; but as a rule the larger islands presented wide areas of rich fertile soil, suitable for cultivation.

“The course of the currents along the Mexican and the Central and South American coasts clearly indicates to us the sources from which the fauna and flora of the volcanic group of the Galapagos has derived its origin. The distance from the coast of Ecuador (Galera Point and Cape San Francisco) is in a direct line not much over five hundred miles, and that from the Costa Rica coast but a little over six hundred miles, and the bottom must be for its whole distance strewn thickly with vegetable matter. The force of the currents is very great, sometimes as much as seventy-five miles a day, so that seeds, fruits, masses of vegetation harboring small reptiles, or even large ones, as well as other terrestrial animals, need not be afloat long before they might safely be landed on the shores of the Galapagos. Its flora, as is well known, is eminently American, while its fauna at every point discloses its affinity to the Mexican, Central, or South American and even West Indian

types, from which it has probably originated; the last indicating, as well as so many of the marine types collected during this expedition, the close connection that once existed between the Panamic region and the Caribbean and Gulf of Mexico."

Continuing his line along between Chatham and Indefatigable Islands, Agassiz was disappointed in his poor hauls: —

ON BOARD THE ALBATROSS,
INDEFATIGABLE ID., April, 1891.

"Here we are at anchor in Conway Bay on the west end of Indefatigable Island, having done all we can afford to do at the Galapagos. We spent nearly three days at Chatham Island, which is the island where a man by the name of Cobos has been having a farm since '67; up to a couple of years ago he worked it with convicts, but they gave so much trouble and it was so dangerous for him and his family that he applied to the Ecuadorian Government to remove them, and now has regularly paid workmen, a colony of about three hundred including women and children. He has now laid out quite a large cattle ranch, about twenty thousand head of cattle, a large sugar plantation, a coffee plantation, and a huge vegetable garden. He salts his meats and carries on also an extensive fishery, sending all his plunder to Guayaquil. He has a small trading schooner which goes during the season about once a month to the islands. It was quite funny to find Baur's¹ letter had just reached him, a few day before we got there, by an Ecuador man-of-war, which had been sent evidently to watch us, they thinking the United States

¹ The naturalist, Georg Baur, then visiting the Galapagos.

Government had some views on the islands connected with the Canal at Panama or Nicaragua! We paid him (Cobos) a visit to his hacienda about six miles from where we were at anchor. He promised to send mules to meet the crowd, but, true Spanish fashion, after we waited for two hours, we decided to start to walk. It had got pretty hot by that time, and the road was nearly impassable from the rain. It is the hot rainy season here now, so you can easily imagine the spectacle presented by the officers after an hour of walking up to our knees in mud in a broiling sun. But at last we met the mules and cooled down toward the last part of the trip. We took lunch in the most primitive manner. Everything very good, but no comforts of any kind, and dirty beyond description. We sauntered round the village of workmen, a most interesting sight in the way of social economy, and took some fresh mules to ride over the greater part of the island. It is really quite pretty when you get up well along the mountain-side, about two thousand feet, and pass above the tangle of cactus and mimosa, which makes the lower slope of the island nearly impassable.

The doctor of the ship was most busy during our stay. He had all the ills of the population to attend to, for there is no physician settled on the plantation! The men shot a good lot of birds, and Mr. Townsend has been a most hard-worked man skinning the plunder. I spent my time on shore collecting rocks, botanizing, and catching insects, and it seemed quite natural to be going round again with a butterfly net. After endless delays we succeeded at last in getting our provisions on board and sailed for Charles Island. That has an old abandoned plantation, the first of the islands where the

Captain wanted to give the men shore liberty to fish, bathe, and get all the fruit they wanted, as there were no liquor shops in the way. We stayed there one day ; the men had their fill, and I spent my time much as I did on Chatham.

Next we went to a small island called Duncan, hoping to get a lot of the gigantic land tortoise and lizards peculiar to the island. We found plenty of the latter, but only got one of the former ; this I was sorry for, as I depended upon our catch to fill up the Galapagos Islands group in the Pacific Exhibition Room. Still I think the Hassler brought some turtles, and I will have Garman make an exhibit of the reptiles of the group anyway. Townsend is to give me a set of the birds, so that we can make a show at least in the space reserved for oceanic islands in the Pacific Room. At Duncan, I spent the day tramping, hoping to get a turtle or so, but only got very warm and greatly enjoyed the bath at the end of the day in a beautiful clear coral beach where I paddled round until I got well cooled. After dark we steamed to Indefatigable where I write this, and shall start early to-morrow on our regular dredging trip again, and nothing ought to interfere to keep us from dredging to our hearts' content from here to Acapulco."

Shortly before reaching Acapulco he continues :—

"Here we are within three hundred miles of Acapulco, and a more disgusted individual it would be difficult to find. After leaving Indefatigable Island we began to dredge ; and I fondly hoped on the weather side of the Galapagos to find a very rich fauna and to make splendid hauls. But time after time the trawl came up

with about a pint of most uninteresting specimens, or else it came up torn to pieces, as the lava bottom played havoc with the nets, and so it kept up till we left Cul-pepper Island, the most northerly of the islands; and I hoped that at least on the sea bottom of the deep basin, when out of the influence of the lava fields of the islands, we should get some good deep-water hauls. But there again, that part of the Pacific proved as barren as the rest, and the piece of sea I had been congratulating myself that the Challenger left for me, has been a great disappointment. We still have the chance off Acapulco, now when within sight of land, to get something on the continental slope. I settled, however, once for all the fact that below two hundred fathoms at sea there was no animal life, and the pelagic people will now have to stop sailing into me, and take a back seat. Day before yesterday we struck a regular trade-wind blow and I was as sick as I could be, and as luck would have it I could not find my Leavitt seasick pills, so made myself as comfortable as I could. Of course no work could be done, and yesterday the weather moderated for us to work again and my stomach resumed its usual placidity. It's funny what things you wish to eat while trying to get well. I managed to eat a little pineapple, some fried bananas, and sour-kraut! It seems a queer combination, but worked admirably and kept me well alive."

On their arrival in Acapulco he writes:—

"We are in the midst of coaling, and a more filthy place than the Albatross is just now, you cannot imagine. I begin to realize what I escaped at Panama. I have not gone ashore here to live because the hotel is such a frightful hole that even I, accustomed as I am

to Spanish ways, could scarcely stand it. We spent yesterday making official calls to the Governor of the Province and the Captain of the Port. The former is a very fine specimen of a Spaniard. He was with Diaz in the defense of Puebla, made prisoner, escaped from the French, and is in every way a very interesting man, well educated, speaks French and English, and has a very good-looking and pleasant daughter educated in San Francisco.

“I see you have also the common idea that Panama is deadly and the climate frightful. The whole thing is a mistake and if people who go there will observe the ordinary precautions, there is not the least danger.”

TO MRS. C. L. PEIRSON ¹

ACAPULCO, Apl. 13, 1891.

We arrived here last night, and among other letters I was pleased to find two from you. I expect from your many dissipations to find you and Charlie quite poorly—it seems funny to think of anybody's going to dine! I hear a good deal about grub on board, but nothing of the kind that could be called a dinner by our friend Ward McAllister. I think I shall quite enjoy a good dinner served with some style, but it does not look as if I should get one very soon, for I shall have to trot to Calumet soon after reaching Cambridge and see if there is anything left to pay for the coal bills of the Albatross. We are just laying in two hundred tons, at twenty dollars, and have had that pleasure twice before at Panama, so I feel quite poor. This is quite a quaint mediæval place, has not changed an atom from the time it used to be the great rendezvous of the Spanish gal-

¹ His sister-in-law.

leons sailing from Manila and sending their treasures overland to Vera Cruz for old Spain. Fort San Diego looks much as it must have in those days, and is of course to-day perfectly useless. It seems strange to me to be here again. I spent six weeks here in '59, a young chap with my whole life before me, and I remember very distinctly the week I passed here again on my way home to be married; it seems only yesterday. Little did I dream in those days of what I should have to go through. I had everything to live for then, and it has been pretty uphill work for a long time. But I ought not to complain, or at least the world does not think so. I have been in all I have undertaken most successful from the world's point of view, but from mine it has lost its charm long ago.

My trip is now drawing to a close. We sail day after to-morrow and should reach Guaymas the 25th. Then I shall leave the Albatross and shall not be sorry to be wending my way homeward. This will make nearly three months at sea, and that is quite enough for one season. I have, however, been most comfortable. The officers have done all they could to make the cruise a success, and I shall have accomplished a project I had almost given up. It has not been quite what I anticipated, but has amply repaid me for the time spent.

On leaving Acapulco the cruise continued up the Gulf of California; since the character of the bottom, as given on the charts, indicated nothing different from what had been dredged off the coast of Acapulco, the ship steamed as far as Cape Corrientes without making a haul. Here they brought up nothing but mud and decayed vegetable matter, so they kept on up the Gulf

of California till off the Tres Marias. Here some good hauls were made, though the character of the bottom did not change materially as the Albatross went farther north into the Gulf. They found the trawling most difficult from the weight of mud brought up in the trawl, but occasionally a rich haul more than repaid them for the less productive ones.

“Two of the hauls are especially worthy of mention as being characteristic of the deep-water fauna of the Gulf of California, one made in 995 fathoms, and the other in 1588 fathoms. We obtained in these hauls a number of *Ophiomusium* and *Ophiocreas*, some specimens of *Schizaster*, a new genus allied to *Paleopneustes*, and also the same species of *Cystechinus*, with a hard test, and of *Phormosoma*, which we had obtained before on the line from the Galapagos to Acapulco.”

The Albatross reached Guaymas on the afternoon of April 23, where Agassiz left the ship and made directly for the East by rail. The collections were afterwards distributed, to be worked up, among the best specialists anywhere available, and proved far richer than one would gather from Agassiz’s letters at the time. Writing of the expedition years later, he says:—

“We spent more than two months dredging and trawling with great activity, and succeeded in bringing together in that time a collection of deep-sea forms which probably has not had its equal in any other expedition. I had always hoped sometime to work with Captain Tanner, and it was natural that with our combined experience we should have been as successful as we were.

That we had worked hard was seen at the end of our trip. At Guaymas, when I left the ship, we were neither of us in condition to do another stroke of work."

During this cruise Agassiz made a special study of vertical distribution of pelagic fauna, or the depth to which floating animals may be found beneath the surface. Some naturalists, especially the staff of the Challenger, and more recently Dr. Chun, had reached the conclusion that animal life extended to great depths in the ocean.

But the Challenger experimented on this question only during the last part of her cruise, and did not use nets that could be closed before being drawn up, so that they might collect anything on the way to the top of the water. This is the so-called differential method, which Agassiz always regarded with the greatest distrust. For example, suppose that an open net is drawn up vertically from one hundred fathoms, and a second from two hundred fathoms. By this method it is assumed that anything found in the second net that was not in the first net *must come* from between one hundred and two hundred fathoms. Dr. Chun used a net which, after being towed at a given depth, could be closed before being drawn to the surface. But most of his work was done in the Mediterranean, where the conditions are entirely different from those in the open sea, and he himself says he had difficulty in closing his net properly.

It will be remembered that in his cruises in the Blake, Agassiz had investigated this question with the Sigsbee Gravitating Trap, by means of which it was possible to filter a column of water of any desired height at any

given depth. With this instrument he had been unable to get life at one hundred and fifty fathoms. He brought on board the Albatross a net similar to that used by Dr. Chun, made for the expedition by Ballauf of Washington. This was not found to work satisfactorily and was discarded after a first attempt. But, "thanks to the ingenuity of Captain Tanner," he and Agassiz between them devised an arrangement known as the "Tanner" net. This was so weighted that it went down bottom first, thus preventing anything from getting into the net on the way. It was then towed for a time at any desired depth, and before being hauled to the surface a messenger was sent down that released two weights which tightly closed the lower part of the net, leaving the upper part open, to catch specimens on the way to the surface. On account of the simplicity of its construction and the accuracy of its action, Agassiz always considered this closing net far more reliable than any other similar contrivance.

The results of a very considerable use of the Tanner net on this expedition led him to believe that in the open ocean there is a very marked falling-off in animal life below two hundred fathoms. Later experiences, though they did not alter his general conclusions, would seem to have somewhat extended the depth to which he believed life to extend.

During his last expedition in 1907, Agassiz said, in conversation, that from the results of his own investigations he was of the opinion that in the *open ocean* there was a great intermediate belt between the pelagic fauna and the species living at or near the bottom, where there was practically no life, nothing but the falling bodies of dead animals. Where the results of other ob-

servers had led to a different conclusion, he was inclined to attribute it to the defective working of the apparatus used. His experience in the Gulf of California, on the other hand, led him to believe that in a comparatively closed sea there may be a mixture of the pelagic species with the free swimming animals that live at or near the bottom.

This was with one exception the last of Agassiz's expeditions that was purely zoölogical. The main object of his subsequent voyages was the investigation of coral reefs and coral islands, and the questions arising from the study of their formation. During the latter part of his life he does not appear to have been greatly interested in the question of the vertical distribution of life in the ocean. On only two of his later trips did he ever use a Tanner net. On the *Wild Duck* in 1893, he made some casts with one off Havana, and a few in the Tongue of the Ocean in the Bahamas, which led him in no way to modify his views.

Some months after this last expedition, he says, in writing to Dr. Giesbrecht: —

“I do not wish in any way to be obstinate about my views as to the extension of pelagic life — not necessarily surface forms — to great depths. All I care to know positively is, whether at sea, far from land, the sheet of water below 250 or 300 fathoms is populated densely or so sparsely as to enable us to say that animal life practically ceases at the depths of 250 to 300 fathoms. I am not fighting for any theory, I am only stating my experience, and it is very strange that I have so invariably been unsuccessful in tracing the existence of animal life below the above-mentioned limits, while

others have always found something. I have no theory. I have merely tried to account for the differences of results obtained by Chierchia, Murray, Chun, and others by some rational explanation, and when I see one net after another abandoned or condemned in successive expeditions, I naturally condemn the results which accompanied and were deduced by them. But the writers of the results do not seem to think that the one includes the other."

In the Eastern Pacific Expedition of the Albatross, in 1904-05, Agassiz again used the Tanner net a few times, bringing up specimens (especially certain species of jelly-fish) from three hundred and four hundred fathoms. He is apparently at that time not sufficiently interested in the matter more than to mention the facts; the only comment in his notebooks of the voyage being, "nothing of any size below 350 to 400 fathoms."

The problem that Agassiz had always considered of greatest interest in connection with his deep-sea work was the comparative study of the marine fauna on the two sides of the Isthmus of Panama. When all the reports of the numerous specialists who were working on the various collections of the Blake and the Albatross Expedition of 1891 were completed, he had always hoped to summarize the results in a Panamic Report in which he expected to establish some interesting conclusions. Of this subject he says in his presidential address before the International Zoölogical Congress in Boston in 1907:—

"Much has been written on the relationship of the marine animals of the Caribbean and of the Panamic

region, but the speculations are all based upon data supplied by collections made upon the littoral regions. It was not until the collections made by the Blake on the Atlantic and Caribbean side, and by the Albatross on the Panamic side, were studied, collections extending to the deepest waters of both regions, that we were able to speculate with some degree of certainty upon the causes which led to the existence of the peculiar fauna characteristic of the deep waters of the Caribbean, a fauna more closely allied to the Panamic deep-water fauna than to that of the Atlantic, and suggesting that after the formation of the Windward Islands, which, in great part, cut off the Caribbean from the Atlantic, there must have been a free connection with the Panamic region of a depth greater than that which connected it with the Atlantic.

"It of course became necessary to carry on geological surveys to determine the age at which these connections were established, and again closed, to obtain some measure of the time elapsed necessary to differentiate the marine fauna of the two sides of the Isthmus of Panama. While the length of this period can only be vaguely inferred, it gives us at any rate the comparative measure of the changes which have taken place in these faunæ from the time when the marine fauna of the later Cretaceous was passing into the older and more recent Tertiaries, and until the existing state of things was established. The preliminary geological studies I carried on in connection with the study of the West Indian coral reefs, necessary to determine the age of the development of the larger Antilles and of the Windward Islands, have been extended for me by Hill and others, so that we now have a fair idea of the geolog-

ical sequence of events in the growth of the Caribbean area.

“The careful, comparative study of the collections of the Blake and Albatross is now nearly complete,—a study carried out by specialists is absolutely essential, for no mere superficial sketch even by an experienced zoölogist will suffice in drawing conclusions of any value and bring out the minute, interesting, fundamental details which no general zoölogist can hope to grasp. Whatever final value the correlation of these Reports may have will be due to the assistance I have received from my collaborators in so many special fields, and my indebtedness to them I find it difficult to express.”

Unfortunately at the time of his death there were a few reports of the Blake and a considerable number of the Albatross Expedition still unfinished, so the “Panamic Report” was never written.

All the unfinished reports of the specialists working on collections from any of Agassiz’s expeditions will, however, eventually be published from a fund he left for this purpose.

CHAPTER XII

CORAL REEFS

AGASSIZ broke the winter of 1891-92 by a visit to Japan, with his second son Maximilian. Apart from his pleasure in collecting old bronzes and porcelains, he was especially interested in a visit to a copper mine, and a trip to Bandai San. Taking a small steamer through the Inland Sea they reached Niihama on the Island of Shikoku, the site of the smelting works of the mine. Here they spent three days in the owner's house. Writing from there Agassiz says :—

“ It is such a pretty place, and such beautiful things as the Manager showed us stowed away in a ‘ godown ’ as they call their warehouse. There were some lacquers and bronzes and Chinese and Japanese vases to make one green with envy, but Souvinisto Nuo, the owner of the mine, is one of the richest men in Japan. The mine has been in his family for two hundred years !! The smelting works are very well arranged, as are their stamp mills and the mine and everything is very well done. We left to go to the mine early in a drenching rain in rikishas. . . .

“ Finally we reached the tunnel of the mine, which is four thousand feet above the level of the sea. The tunnel goes through the mountain and comes out the other side where the village, making up the mine, is placed in a narrow gorge of the mountain, the houses arranged in terraces, one above the other, and glad

enough we were to get to the Manager's house and have lunch.

"After that we went underground and examined a specimen of all their processes. They do their work very well, and I am very glad to have seen this place and to know what they propose doing. All this gives me more faith in Calumet than ever. We were great fools not to own it all, as we might have done. Such a desolate place as the mining village I never saw."

On his return to the main island, in describing his rikisha trip from the railway to Bandai San, a mountain well up in the northern part, he writes:—

"The road passes through huge tracts of mulberry orchards, just sprouting with black clusters of the tiny silkworms attached to the young leaves. We passed through a magnificent forest of the Kaika tree, a huge gnarled trunk, resembling old beeches, with a leaf like that of an elm. The villages we passed through were all farmers' villages and very poor-looking compared to those of Central Japan. . . . The mountains of the Central Range have wider and more numerous spurs, having comparatively fewer valleys and places for cultivation and this, added to the greater northern latitude, tells greatly on the general aspect of the country, which is decidedly northern and sterile. . . . At Inawashiro village, which we reached at about four in the afternoon, we found a very dilapidated inn."

This is the nearest point to Bandai San, a mountain, over 5000 feet high, which had blown up some four years previously, sending more than half its mass in a

great wave of earth and stones down the adjacent valley, covering a tract of country about fifteen by ten miles, making two large lakes by damming the river, burying many villages, and killing about five hundred people.

“ After walking about a mile we came to the gravelled flow which nearly destroyed the village of Mine. This flow we followed for a mile or so, and then walked about three miles until we came to the bed of a stream entirely covered with huge boulders and sand. Both these districts were before the eruption well cultivated and filled with thriving hamlets. We walked along the river-bed for about four miles, and then crossed a low pass and a series of ravines, gradually climbing for about two hours till we reached the edge of the huge excavation made by the blowing-off of the mountain, and could see from the point we had reached the two lakes and the heaps of gravel and of boulders covering the once fertile tract, with no end of little cones formed by the minor explosions of steam which are still going on in the main cavity formed. There steam is issuing all the time and we heard many ominous noises and distant rumbling, which made us feel somewhat uncomfortable, as we were standing on the vertical edge of the bluff left standing! Max took many views which I hope will print well, and I was fortunate enough at Sendai, to find a lot of photographs taken soon after the eruption.”

He reached Tacoma in June, laden with spoil; but for once his trophies were not scientific, but artistic additions to the collections of old Chinese and Japanese bronzes and porcelains that had been gradually accumulating in his Cambridge and Newport houses.

On his way East he made his semiannual visit to Calumet, reaching Newport in time for a late summer there.

TO SIR JOHN MURRAY

CASTLE HILL, NEWPORT,
August 2, 1892.

Thanks to sundry washouts we were delayed along the line of the North Pacific and I found more to do at Calumet than I expected, so did not reach here till long after you sailed. I found your magnificent volume on the deep-sea deposits and you are to be congratulated for so fine a result. I've only had time to turn over the leaves and look at the Plates and expect to read it carefully later. I've been here for a few days and found the Laboratory in full blast here. I hardly think I shall be able to do much work myself; the accumulations during my absence are prodigious, and it will be all I can manage to get my head above water by the fall. I am thinking of building a new seagoing launch for work in connection with the Laboratory here. I wish you could ship me one over here whole from the other side, free of duty as a piece of philosophical apparatus! My last launch was intended to be a phenomenon, and so she proved; she was so utterly unseaworthy that I was afraid to go out in her in an ordinary seaway, and she now graces the Hudson River, when the seas are not over an inch high, that she can stand.

About this time Agassiz published an extensive monograph on *Calamocrinus diomedæ*, a deep-sea crinoid first dredged off the Galapagos by the Albatross on her way to San Francisco in 1888, of which he had found an additional specimen in a trawl off Mariato Point in

1891. The study of this species of a new genus of stalked crinoids was of especial interest, as it bore a close relation to extinct fossil forms of past geological ages, having a striking resemblance to a large group of fossil crinoids of Mesozoic time.

For many years he had occupied his summers chiefly in the study of the development of young fishes and the life history of jelly-fish, with an occasional experiment in the protective coloration of fish and Crustacea. But after this period his research work at Newport was much curtailed by the time required to write up the reports of his previous expeditions, and by the care of the correspondence involved in the distribution of his various collections and the publication of reports of the specialists to whom they were allotted. Since there were over ninety of these gentlemen, and as Agassiz always wrote his letters with his own hand, one may gather some idea of the labor involved in keeping in touch with them.

The year 1892 marks the close of a distinct period in Agassiz's life. Until then he had devoted himself chiefly to marine zoölogy. The main scientific interest of his later life was, however, the study of coral islands and reefs, and the method of their formation. This question has a broader interest than is at first apparent, for it leads directly to a consideration of the forces which, in recent geological times, have made the surface of this planet what we find it to-day.

Many of us remember, in the physical geographies of our youth, an illustration of a coral atoll. It captivated our fancy, being so different from anything that had come within our own personal experience, for we had

not ourselves as yet associated with pirates in the South Seas. The picture, to which we loved to return from the perusal of more trying subjects, showed a low, rakish-looking schooner lying peacefully at anchor in a quiet lagoon surrounded by a circle, deceptively perfect, formed of a narrow strip of land studded with cocoanut palms, under which nestled a few native huts, whose primitive outlines appealed to our imagination. On the outside rim huge rollers, heaped up by the trade winds, beat with savage force. Those of us who, in later years, were fortunate enough to visit such regions, when a cruel civilization had swept away most of the pirates, were surprised to find that, fascinating as these atolls were, the perfectly circular land rim of our geographies was the rarest exception. Their form, often most irregular, scarcely ever even approached a true circle. The land rim, seldom continuous, and often broken by gaps of submerged reef or deeper passages, was on the lee side frequently little more than a line of breakers, with perhaps here and there a bit of half-formed land rising along its glistening curve. Sometimes the emerald green of the atoll's quiet lagoon would be bounded only by a white ribbon of sinuous breakers pounding over a convex coral reef.

It is impossible to suppose that these curious coral formations have grown up from the depths of the ocean, since twenty fathoms appears to be about the limit at which reef-building corals usually flourish abundantly. The poet naturalist Chamisso, who, from 1815 to 1818, accompanied Kotzebue on his voyage around the world, imagined that atolls grew on the summits of volcanic upheavals of the bed of the sea, which had reached sufficiently near the surface to permit the corals to obtain a foothold.

Darwin, on his return from the voyage in the Beagle, first published in 1840 his well-known theory of the formation of coral atolls, and their cousins the barrier reefs, which, at some distance from the shore, encircle an island or extend along a coast line, leaving a considerable passage between them and the land.

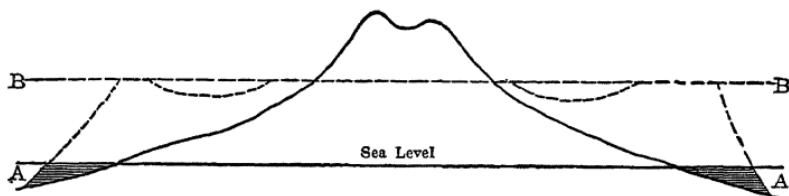


FIG. 1

Suppose Fig. 1 to represent an island along whose edges corals have begun to grow, as shown by the shaded portion *A*. Then, according to Darwin's theory, if we imagine the island gradually to subside at the same rate at which the coral grows, we would in time find a condition shown in the dotted lines, where *B B* represents the new sea level. A smaller island is now surrounded by a barrier reef, the passage between them caused by the favorable position of the outer rim for a more luxuriant growth of coral.

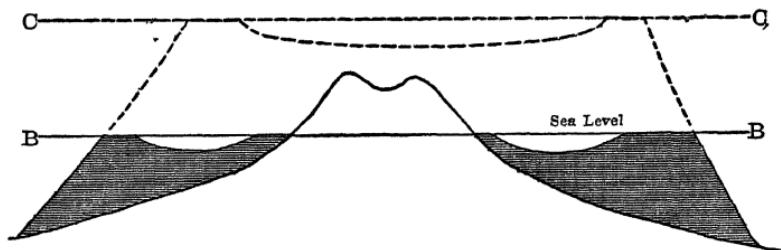


FIG. 2

Let Fig. 2 represent the second condition of the island, the shaded parts showing the coral growth. Now

supposing the process to continue until the island is submerged. This new condition is represented by the dotted lines. *C C* is the new sea level; nothing remains but a lagoon enclosed in a circle of coral reef, which might later be built up to form a lagoon island.

The beauty and simplicity of this theory of Darwin's appealed to the layman as well as to the man of science; it was strengthened by the investigations of Dana, published in 1849, who as naturalist accompanied Captain Wilkes on his memorable voyage from 1838 to 1842. For many years it remained unquestioned as the true explanation of the causes that had led to the creation of these curious formations. But this theory does not rest on the patient investigations that characterize Darwin's other work; he himself says in his autobiography¹ that it was formed before he even saw a coral reef. Keeling was the only atoll on which he ever landed, and his investigation of barrier reefs was limited to Mauritius and Tahiti. Dana's observations, although more extensive, appear to have been much curtailed by Wilkes's fear that his distinguished companion would be eaten by savages.

Both Darwin and Dana, it may be noted, have assumed a possibility as a fact, and the theory once given, have attempted to prove the subsidence, instead of bringing the subsidence of coral reefs in support of the theory. Indeed, the advocates of Darwin's view have assumed a subsidence from the existence of atolls in regions where there are innumerable proofs of elevation.

Gradually, a few men of science began to suspect that the true explanation of the formation of coral reefs might not be so simple. As early as the middle of the

¹ *Life and Letters*, vol. 1, p. 58.

last century both Louis Agassiz and Le Conte had felt the difficulty of applying Darwin's theory of subsidence to the conditions existing along the Straits of Florida. Semper, who in 1863 visited the Pelew Islands, was satisfied that the theory did not offer an explanation of the formation of the coral reefs of that region; and Murray had returned from the voyage of the Challenger convinced of the fallacy of the conception. Mr. Henry O. Forbes, who visited Keeling Atoll some forty years after Darwin, could not satisfy himself that there was any proof of subsidence there, or that the causes cited by the opponents of Darwin's theory were not sufficient to account for all the phenomena he observed. When Agassiz was in Edinburgh, helping to distribute the collections of the Challenger, he and Murray had many talks on the subject, and Agassiz then expressed his hope of investigating the question for himself.

During his cruise on the Blake, Agassiz satisfied himself that Darwin's theory could not account either for the formation of the Florida Reefs, or the Alacran Reef, an atoll-shaped coral growth to the north of Yucatan. For it seemed evident to him that subsidence could not offer a correct explanation for events that had taken place in regions of elevation, or districts that had long remained stationary. He reached the conclusion that the coral reefs of these localities had begun their growths on banks which had been built up by various agencies until they had reached a point where the depth was suitable for the growth of corals, and that in this region the coral reefs were a comparatively thin crust resting on such foundations. The accuracy of this view for that district is believed to have now been settled by the examinations of the borings of artesian wells, which show

the thinness of the coral formations. Writing to Huxley at a somewhat later date, Agassiz says:—

“A short time ago I received from an artesian well at Key West samples of rock one thousand feet from the surface, entirely made up of Foraminifera, débris of Mollusks, Echinoderms, and Crustacea, rock very similar to that now forming on the Pountalès plateau off Key West in three hundred fathoms, and totally different from coral reef rock, a strong probability that the underlying rocks of the Florida plateau were built up as I suggested from my dredgings of rock similar to that of the Pountalès plateau up to the depth at which coral reefs could begin to grow, when they took the prominent part.”

The newer theories of the formation of coral reefs and coral islands are chiefly associated with the names of Agassiz and Murray, who were in the main in accord in their ideas on the subject, though in some cases they apparently differed as to the amount of work done by modern corals, and seem to have placed somewhat different values on the relative efficiency of the action of erosion, solution, and the scouring force of the ocean in the formation of atolls and barrier reefs. Murray laid much importance on the effects of solution in creating lagoons and the passages between barrier reefs and the land, while we shall see in Agassiz’s subsequent expeditions the manner in which he believed them to have been produced. In a letter to Huxley he says on this point: “I do not believe that solution as such has produced the effects Murray ascribes to it. It has been a factor, but a more limited one than he assumes.”

Stated roughly, Agassiz believed that corals, especially modern corals, have played a far less important rôle in the formation of atolls and barrier reefs than Darwin's theory would imply. The corals merely take up their work after the banks and shoals prepared for them have reached a suitable depth, or height, for their growth. These shallows owe their existence to various causes, which differ in different localities; they may be due either to accumulations of silt, deposits of the shells of marine animals, the erosion of volcanic islands, or æolian limestone hills, or other non-coralline limestones, and in some cases they appear to have been formed from what is apparently Tertiary coral rock. It is an essential part of Agassiz's theory, as will be explained in a later chapter, that he considered the origin of these Tertiary coral formations an entirely separate question from the method of formation of modern coral growths.

It will readily be seen that Darwin's theory demands a very considerable thickness of coral formation. Thus in any locality where the existence of only a comparatively thin layer of coral can be proved, it may be assumed that Darwin's theory does not hold good. On the other hand, a thick mass of coral rock would not necessarily indicate subsidence; for, as both Murray and Agassiz have shown, such a formation might have originated from the growth of a coral reef pushing out to sea on its own talus the débris of the reef, which, broken off by the waves, had rolled down and built up its outer slope. Furthermore, where a modern reef had obtained a foothold on an eroded platform of older limestone containing corals, it would often be exceedingly difficult by boring to detect from the core the difference between them.

Although most naturalists who, since Dana's day, have examined coral reefs in the field have found difficulty in reconciling what they saw with Darwin's theory of subsidence, still the idea proved singularly tenacious of life. This was probably in part due to the authority that would naturally be given to any statement of Darwin, and perhaps also to a failure fully to recognize that the question was in no way connected with the theory of evolution.

It is worth emphasizing that the strongest opponents of the new theories were men who had never seen a coral reef, and may possibly have been in somewhat the same attitude of mind as a frank layman of Agassiz's acquaintance, who confessed that, having acquired Darwin's theory in his youth at the cost of much pain and labor, he could not possibly assimilate another.

Had Darwin lived to see the mass of evidence contradicting his theory which has been collected since his day, it does not seem improbable that he would greatly have modified his views. Darwin used good-naturedly to assure the elder Agassiz that if he lived long enough he would be converted to his theories of evolution. Might not Alexander have said the same to Darwin on the subject of coral islands?

Wishing to continue his study of coral reefs, begun on the Blake, Agassiz spent several weeks at the Tortugas in 1881, where he had quarters in Fort Jefferson. He selected this spot because he then considered the coral reefs of the Tortugas to offer a sort of epitome of the probable method of the formation of the southern part of the Peninsula of Florida.

TO DARWIN

TORTUGAS, April 16, 1881.

It is very natural you should be in my mind, as I am in the midst of corals. I came down here about six weeks ago to study the surface fauna of the Gulf Stream. The Coast Survey placed a small launch at my disposal to go out and scour the surface when the weather is favorable. Unfortunately thus far I have had little chance to accomplish what I started to do, as I find is nearly always the case on the seashore — you never can do what you wish, but have to be satisfied with what turns up. Thus far I have only found the more common things with which I was familiar from my former Blake experience and from meeting them late in the fall at Newport.

I took advantage of bad weather to finish up a lot of drawings and notes on *Velella* and *Porpita*, and have some interesting things about the post-embryonic stages of both, which I hope to publish next summer if I get time to finish the drawings. The greater part of my time I spend in running round inside the reef in the launch and getting at the distribution of the different genera of corals. The number of species here is not great, so it makes their mapping out a simple matter. The Tortugas being the very last of the Florida reefs I find much that has not been noticed before and helps to explain, somewhat differently from what was done by Father, the formation of the reefs. On my way here I went across the northern base of the Peninsula of Florida — from Jacksonville to Cedar Keys, and found halfway across a series of hammocks and old coral reefs, such as are found in the Everglades at the southern extremity. In

tracing the growth of the reefs and the formation of the Peninsula, I have come across no signs of any elevation. Everything, on the contrary, tends to show that the immense plateau which forms the base upon which the Peninsula of Florida is formed, was built up by the débris of animal remains,—Mollusks, Corals, Echinoderms, etc. (after it had originally reached a certain depth in the ocean), until it reached the proper height for corals to flourish. This here is not much deeper than seven to eight fathoms; generally six fathoms marks the limit. To the westward of this group of reefs is a coral reef starting on a bank at a depth of seven fathoms.

I expect to publish a small map of the distribution of the corals of the Tortugas as soon as I return home, in my report of work (not done) to the Superintendent of the Coast Survey. I shall, however, have first to finish reading the proofs of the Challenger Echini, the last pages of which I expect to find awaiting my return home, and I trust you will see that Memoir out during the summer.

To this Darwin replied in a letter characteristically full of courtesy and open-mindedness, qualities not always conspicuous in scientific discussions. It has already been published in "More Letters of Charles Darwin," but a few passages may not be out of place here:—

"You will have seen Mr. Murray's views on the formation of atolls and barrier reefs. Before publishing my book I thought long over the same view, but only as far as ordinary marine organisms are concerned, for at that time little was known of the multitude of min-

ute oceanic organisms. I rejected this view as from the few dredgings made in the Beagle in the South Temperate regions, I concluded that shells, the smaller corals, etc., etc., decayed and were dissolved, when not protected by the deposition of sediment; and sediment could not accumulate in the open ocean. . . . I have expressly said that a bank at the proper depth would give rise to an atoll, which could not be distinguished from one formed during subsidence. . . . Lastly, I cannot understand Mr. Murray, who admits that small calcareous organisms are dissolved by the carbonic acid in the water at great depths, and that coral reefs, etc., etc., are likewise dissolved near the surface, but that this does not occur at intermediate depths, where he believes that the minute oceanic calcareous organisms accumulate until the bank reaches within the reef-building depth. But I suppose that I must have misunderstood him. Pray forgive me for troubling you at such length, but it has occurred to me that you might be disposed to give, after your wide experience, your judgment. If I am wrong, the sooner I am knocked on the head and annihilated, so much the better. It still seems to me a marvelous thing that there should not have been much and long-continued subsidence in the beds of the great oceans."

Murray at the time does not appear to have made his point clear to either Darwin or Agassiz that the formation of a bank by the deposit of the shells of small pelagic animals falling to the bottom, was merely a question of their accumulating faster than they dissolved. Before reaching great depths, the shells would, in falling slowly through the water, be dissolved faster

than they accumulated on the bottom. This would also be the case in shallow water, where a thin layer of pelagic life would not furnish so many shells. At intermediate depths, on the other hand, the shells, having less distance to fall, would be less dissolved, and would accumulate.

TO DARWIN

CAMBRIDGE, May 19, 1881.

I find on my return from the Tortugas your most welcome letter of May 5. I am now at work on the Report of the Coral Reefs of the Tortugas, and hope during the course of the summer to be able to send it to you. As you well say, the fact that the Peninsula of Florida should have remained at the same level for so long a time is most surprising. This I consider to be in part due to the original orographic conditions of the Gulf of Mexico, as we have not only the Florida Peninsula but other equally important banks: Yucatan, Bahamas, and San Pedro Banks, all of which are characterized by a general dead level which they have evidently kept for an immense period of time. Yet on the other side of the Straits of Florida and all along the line of the larger Antilles, as far as Barbados, and along the northern of the Windward Islands, we have the *most distinct proof of elevation*. . . .

I should feel at present inclined to assign to the action of large marine animals (such as *Gorgoniæ*, Starfishes, Mollusks, Echinoderms, Deep-sea Corals, Crustacea, etc.) a more important part in building up a plateau, up to the height at which corals can thrive, than to the pelagic fauna which I would look upon more as the cementing medium, but which, however, in some localities, such as

are in the track of great oceanic currents, as the San Pedro, Yucatan and Florida and Bahama Banks, do yet form an important bulk in the mass of the débris added to the original bank, the level of which was due to the folding of the crust in much earlier periods, at a time when the principal orographic features were laid down. My experience has been that shells, etc., in these plateaus which are in the track of currents, are fairly well preserved after death, although covered with mud (made up mainly of the coral ooze and of Globigerina ooze) which cemented them to the older layer of dead shells, etc., below, and formed the base upon which the present living forms were thriving. Your objection that there is not great probability of finding in the Pacific as many banks as there are atolls is certainly a very strong one and one which seems to me can only be met by showing in subsequent surveys that these atolls are themselves only slightly raised patches upon large banks, the orography of which we do not as yet know. This is a problem in hydrography of the Pacific which I have had in view for a long time and hope to solve one of these days.

With reference to the chemistry of the reefs and the action of all this large amount of carbonate of lime held in suspense in the water, I must acknowledge I know nothing, and I do not see the why of the action of carbonic acid as a solvent at one depth and not at another — if not in exact proportions to the pressure. This part of Murray's argument seems to me untenable, if I understand him correctly, and we seem to have viewed his explanation alike. There is constant talk of making borings at St. Augustine for sinking artesian wells, and whenever they start I shall be sure to keep close watch of their proceedings, which ought to settle a good

many doubtful points as to the structure of the Florida Peninsula.

I am much pleased at what you say of my address ; the part you refer to is just the one which seemed to me to throw some light on the infinite lines of affinities, which close study reveals, among otherwise distinctly related groups, and it was the very difficulty of expressing this affinity by any of our present methods of notation which made me almost despair of doing more than to follow a single character in its endless modifications in time and space.

During a visit to the Hawaiian Islands in 1885, his examination of the coral reefs convinced Agassiz that this was another region not explained by Darwin's theory. The only indications of subsidence he found were slight and local ; and he explains the great width of some of the reefs by the growth of the corals seaward on their own talus, a process which he points out might in time produce a very great thickness of coral rock. In some places, as in Kaneohe Bay, he was able to determine that the modern reef forms only a thin crust over the underlying volcanic rock. He believed the barrier reef of Kaneohe Bay to rest upon a platform formed by the washing down and disintegration of a lava crest to a depth at which corals could flourish — the first instance where such a formation had been noted. He was also able to show that the more elevated limestone rocks were æolian, that is, they had been formed of the sand from coral beaches blown into dunes by the action of the wind, and cemented by rain-water into rock.

The supporters of Darwin's theory answered Agassiz's report on the coral reefs of the Hawaiian Islands by

replying that, granted the correctness of Agassiz's views, the district was simply another exceptional area. This criticism he was destined to meet with such tantalizing frequency in after years, that his subsequent expeditions might almost be called a search for a typical coral region.

CHAPTER XIII

1893-1894

THE BAHAMAS AND BERMUDAS

THE exploration in 1893 of the Bahamas and the Cuban coast was the first of Agassiz's expeditions having for its main object the study of coral reefs. For this voyage Mr. J. M. Forbes lent him the auxiliary steam yacht *Wild Duck*, and through the kindness of the State Department, the Spanish authorities granted the yacht free access to all Cuban ports. In order further to facilitate the expedition, the Superintendent of the Coast Survey appointed Agassiz an "Acting Assistant," remarking in his letter that there was but one other assistant of this "grade and rank," a Jesuit Father in Alaska, so that it was evident that the distribution of such favors was not influenced by politics or religion.

The *Wild Duck* was a light-draught, small displacement schooner, about one hundred and twenty-five feet on the water line, whose engine enabled her to steam about ten knots an hour. To give an added interest to the expedition, Agassiz equipped her for pelagic work. The Fish Commission lent a Tanner sounding machine, and the Coast Survey some deep-sea thermometers. Six hundred fathoms of wire rope were put on board, together with several Tanner closing nets, dredges, trawls, and tow nets. By increasing the diameter of the steam capstan with lagging, the wire rope could be hauled in at the rate of one hundred fathoms in eight minutes.

It was found, however, that in a boat of this type and size it was impossible to handle the apparatus in the long roll of the trades, without the greatest danger of injury to it, and less pelagic work was accomplished than was at first intended.

Agassiz joined the yacht at Jacksonville; he had with him, as assistants, his son Maximilian, the photographer of the trip; Dr. A. G. Mayer, a former student of the Newport Laboratory; and Mr. J. H. Emerton, the zoölogical artist. Leaving Jacksonville on January 8, the party sailed directly for Nassau, which they made their headquarters. Here they were fortunate in securing the best pilot of those regions, a darkey who had been in the service of the Government for twenty years and was supposed to know everything that a black man can. Profiting by the light draught of the Wild Duck, and the exceptional skill of his pilot, Agassiz was enabled to cross the banks in all directions and penetrate into regions otherwise inaccessible. Many of these trips on the banks tested the pilot's ability to the utmost; for with marvelous skill he worked the yacht across the sandbars over one spit and then another, using only the eye or the bearing of some distant little cay. On more than one occasion they anchored in such unusual places for a vessel of their size, that the spongers swooped down on them under the impression that they had gone aground — and were much disappointed at being defrauded of a first-class wrecking party. "Such a set of darkey cut-throats I should not care to have landed on my deck if my vessel was ashore — they looked as if they would leave you but little show."

The first cruise¹ embraced the outer chain of islands,

¹ See Chart 1.

from Eleuthera as far east as Turk's Island. Touching at Watling's Island, the first landfall of Columbus, Agassiz compared the shores of the island with the descriptions given by Columbus, and satisfied himself that the spot selected by Sir Henry Blake was the place where Columbus first landed in the New World. This bit of the shore, known as Columbus Bight, is situated well down on the east coast of the island.

From Turk's Island the yacht headed for Cape Maysi, and then, skirting along close to the southern shore of Cuba, put into Santiago for coal and supplies.

SANTIAGO DE CUBA,

January 25, 1893.

"We had a most interesting trip yesterday to the iron mines near here, at a place called Juragua. The most important mines belong to the Pennsylvania Steel Company and to the Bethlehem Iron Company; they own a large territory and run their works at Steelton, Sparrow Point, and Bethlehem entirely on the product shipped from here, which in all amounts to about 500,000 tons a year. The General Manager is a German, a Pennsylvania Dutchman, and the bulk of the officials are of the same mixed nationality. We left here early in the morning at six, just at daylight, — that's the time all trains start, and went up in what they call the Director's Car, a small locomotive on four wheels with seats for six. All the way to the mine, about sixteen miles by rail, the geology was most interesting, and I managed to do a good bit of work of seeing, by stopping off and on. For nearly eight miles the railroad runs on one of the elevated coral reefs, about twenty feet above the level of the sea, and I managed at a

place called L——, where the railroad strikes off inland, to make an excellent collection of corals from the terrace, while the locomotive was waiting for its right of way. The officials of the mine were quite as interested in that part of my visit as in anything else, and we got crowbars, chisels, and all kinds of tools to cut out some good-sized heads, which are now safely on board. There are three parallel elevated terraces here off this part of the coast, and from the highest, one hundred and sixty feet above the level of the sea, I got some coral heads also. If I have as good luck at Baracoa on the elevated reefs there, and along the north coast, I shall have no cause to complain. A day like yesterday goes far to explain a lot of things.

I only wish we could stay out longer and not be obliged to go in for coal and ice so often and waste so much time in port. But I am thankful for what I have; it means simply a little less work and a good deal more expense than if I had such a boat as the Albatross, when you can stay out thirty days, and then spend no more time fitting out again than we do. The Messrs. Brooks & Company, to whom I gave my letter of credit, were most polite to us, and all the people here in charge of anything have simply been devotion itself. But everything in Spanish ports costs about twice as much as in Nassau, and this is the last time I shall fit out in a Spanish port, I hope. But what I have seen has fully paid so far. I fancy this trip will cure me of any other similar yachting cruise. It looks to me as if it were a little too much for a private party."

Again skirting the coast to Cape Maysi, and later, on a trip along the north shore of Cuba, Agassiz was

able to get an excellent impression of the elevated terraces that form such an important feature of this part of the coast of Cuba. On the way north from the east end of Cuba, after touching at Inagua, the yacht anchored in Hogsty Reef. This is a horseshoe-shaped line of breakers with an opening at the western end into an enclosed lagoon, and forms an atoll about five miles by three, which, with the exception of two little cays, one on each side of the entrance, composed of broken fragments of coral, has not yet had time to make any land. The line of coral reef over which the sea breaks, except in one or two exposed spots, has at least a foot to a foot and a half of water over it even at low tide, but as the reef was some one thousand yards wide, the interior of the lagoon was quite calm, though encircled by bands of white combers piled up by the heavy roll of the trade winds pounding on the flats.

Agassiz, now for the first time anchored in a lagoon, was much impressed by the novelty and strangeness of riding quietly in three fathoms of water, surrounded by lines of huge breakers, with nine hundred fathoms a short distance beyond, and forty-five miles to the nearest land.

Here he passed three days, surveying, sounding, and investigating; and reached the conclusion that the atoll was probably formed by a growth of coral on a bank previously formed by the wearing away of a series of small æolian hills. The existence of the lagoon he attributed to the mechanical action of the surf rushing over the reef. For he thought the mass of water poured over the rim would be a sufficient scouring force in time to hollow out the lagoon within, where, moreover, the conditions were less favorable to a luxuriant growth of

coral. This view was strengthened by his examination, the following year, of the so-called small *Serpulæ* atolls in the Bermudas, which are undoubtedly made in this way. But his judgment in the matter was still in the balance, for he asks, "How deep can it act on a large scale so as to produce an effective result?"

The next anchorage was on Crooked Island Bank, where the pilot managed to find two and a half fathoms, at a spot marked one fathom on the chart. Leaving Crooked Island the yacht visited Long Island and Great Exuma, steamed along the line of cays that skirt Exuma Sound, and entering the bank at Conch Cut crossed to the Tongue of the Ocean, and so back to Nassau.

On his second cruise he explored the bank as far as Great Ragged Island, the point from which Columbus sailed for Cuba. From there Agassiz struck across to Baracoa on the northeastern end of Cuba, and cruised along the north shore as far as Havana, stopping at numerous ports and islands to examine the geology of the coast. He was much interested in the flask-shaped harbors, so characteristic of the Cuban shores, and came to the conclusion that they were due to the gradual cutting away of the drainage area, of which they are the sinks, during the elevation of the coast. Everywhere he was received with the greatest courtesy and consideration, the captains of all the ports having been instructed to allow him to go in and out as he pleased, without the usual formalities.

The following letter was written at various times after leaving Havana, as the ship zigzagged from island to island back to Nassau:—

ON BOARD THE WILD DUCK,
Feb. 27, et seq., 1893.

“ We left Havana the 24th with a splendid day, which enabled me to do a lot of deep-sea towing just outside of Morro Castle in deep water, and most successful it was. We had a splendid run to Salt Key Bank, visited Cay Sal, double headed Shot Cay, where there is a fine light on the English side of the Gulf Stream, and where we have found a nice old Scotchman and his wife who had not seen a soul for three months! They live on a bare rock, but the house is quite comfortable, and what with goats and hens and fishing they manage to get a little variety in their food. We left them some sugar, of which they were out, to their great delight. We then went to the southern islands of the Auguila Bank, and from there crossed to the Great Bahama Bank again, and to-day we have been exploring two points of the Island which have been most interesting and instructive and have given me just the clue I wanted to settle the cause of the present configuration of the Bahamas, so that the cruise has been eminently satisfactory.

“ . . . Since we left Andros we have had magnificent weather; from Billy Island at the north end of the Island, we crossed the bank to Orange Cay, and had as smooth a day as we well could have and just enough breeze to keep us cool. From Orange Cay we ran up to Gun Cay, where we anchored for the night and examined the Island the next A.M. before starting. We then steamed along a lot of islands which could be as well examined from the deck as we passed, and landed next at Great Isaac, one of the most interesting islands of the group. It seemed to have a little of everything which I wanted to see. Next came a lot of diminutive islets,

no larger than a man's head, and then we had a run of forty miles across the bank again to reach Great Harbor near Stirrup Cay, where we anchored last night close to a lighthouse, which enabled us to make the port; but anyway the moonlight was so bright that we could have gone in anywhere, and the evening sail was perfect.

From Stirrup Cay, where we were anchored in the prettiest little bay you can imagine, we steamed close along the Berry Islands and crossed over to Andros to Mastie Point where young Chamberlain¹ has a sisal plantation. We fired a gun as we anchored off one of the most beautiful coral reefs I have ever seen, and rowed inside the surf to his wharf, close to which he has built a most comfortable and roomy house of the Nassau pattern. He has two thousand acres in cultivation, but I fancy leads an absolutely isolated life. He has one English assistant—everybody else black as the ace of spades.

“We arrived at Nassau late last night, having suddenly given up the last part of our cruise, as the weather looked threatening, and the pilot did not think it prudent to anchor off Andros in case a norther came up, as all the appearances indicated.”

The rest of the voyage Agassiz devoted to a trip among the islands to the north of Nassau, and to numerous short expeditions from Nassau as a base. In his three months' wanderings in the Bahamas he travelled nearly four thousand five hundred miles in all possible directions, and visited most of the islands. Late in March he left the yacht in Florida and reached Cambridge early in April.

¹ Son of the English statesman.

What he saw of the elevated terraces of eastern Cuba convinced him that his first examination of this coast, made many years before, had led him to misinterpret their true nature. In common with other naturalists, he had supposed that all these elevated limestones were coral reef rock, representing coral reefs perhaps twelve to fifteen hundred feet thick. He was now able to satisfy himself that the first terrace was a true coral reef which had been elevated to a height of thirty feet or less. The limestones of the second, third, and higher terraces, on the other hand, he considered were of older age and different origin than those of the first elevated reef which flanks the shore. Although he found an occasional mass of a species of reef-building coral in the older limestone, this did not lead him to believe that these rocks belong to the group of reef-building corals, any more than he would have spoken of a few isolated heads of reef-building species found along any shore line as constituting a coral reef. Moreover, since he found the older limestone underlying the coral reef rock of the first terrace, he was inclined to believe that the presence of the fossil corals in the higher terraces might be explained as the remains of a similar veneer of about the same thickness as the first terrace, say twenty-five to thirty feet, which had covered the higher terraces at the time of their elevation.

Recognizing the necessity of a more careful survey by a younger man, Agassiz afterwards sent Professor Robert T. Hill to investigate this question. Hill was able to establish the Tertiary origin of the older limestones of which he writes: "In fact I do not believe that any of the Tertiary limestones are of reef rock origin, but they are mostly organic and chemically

derived marine sediments, mixed with the calcareous débris of the life of the ocean's slopes." Professor Hill was also able to trace a post-Tertiary folding in the older limestones, and so establish an *unconformity between the older limestone and the modern reef rock*, which separated them into two distinct systems. From all of which we seem led to the interesting conclusion that the reef-building corals have played a far smaller part in the formation of the terraces of Cuba than was previously supposed.

Agassiz found that the Bahamas, as far as Turk's Island, were of æolian origin. They were formed at a time when the banks must have been one huge irregularly shaped mass of lowland. From the sand of its great sea beaches, successive ranges of dunes were blown up, such as are still found at New Providence, which the action of the rain and spray has hardened into æolian rock.

He assumed that the "ocean holes" which he surveyed on the bank were made above water, and are similar to the holes found in the æolian rocks on land, and concluded that the Bahamas have subsided about three hundred feet since the formation of the æolian land. During this subsidence the wasting forces of the sea and air have little by little eaten away the land, leaving only here and there narrow strips in the shape of the present islands. The modern coral reefs form but a very insignificant part in the topography of the islands and have had nothing to do with the building up of the islands beyond filling here and there a bight or a cove with more modern reef rock, and they form but a comparatively thin coating on the æolian rock.

As a result of this investigation of the Bahamas, Agassiz believed them to embrace another region of coral reefs whose formation could not be explained by Darwin's theory.

TO SIR JOHN MURRAY

CAMBRIDGE, April 13, 1893.

A few days ago I got back from my trip to the Bahamas. I was quite successful as far as the general reconnaissance of the islands is concerned, but I have learned little more regarding coral reefs and am as far in the dark on the subject of the underlying rocks plateau as I was before I left. It looks to me now as if nothing but a series of systematic diamond drill explorations would settle the disputed points. And I should greatly like next year, if it does not cost too much, to do a little drilling — one hole in Florida, which has been stationary — one hole in the Bahamas, where there has been a slight subsidence — and one hole along the Cuban coast somewhere right through the elevated coral reef terraces, unless I can find a better place in Jamaica, which I do not know.

By the way, I am satisfied that the same causes which have given the Bahamas their present physiognomy have been the cause of the Bermudas assuming their present outline. The coral reefs have of late (geologically late) had absolutely nothing to do with this, and the talk about the present reefs of the Bermudas and Bahamas having been instrumental, owing to subsidence, in giving those islands their present shape, is all moonshine. There is nothing to be seen at the Bermudas or Bahamas which gives us any clue of how these islands were formed by the reefs — we are as

much in the dark in regard to their early origin as ever. The enclosed will give you a little sketch of what I have seen. I had a beastly time, thanks to unusually heavy trades which made pelagic work very difficult, so I did but little. It was aggravating, as I hoped to do lots, having two artists on board who simply ate their heads off! Has not the British Association for the Advancement of Science appointed a committee to act on the boring of coral reefs? If so, who is the active man and what do they propose doing?

TO HUXLEY

CAMBRIDGE, Dec. 24, 1893.

The old year is so far gone that I must not forget to send you my best wishes for the new. I am trying the experiment of staying at home this winter and putting my affairs to rights, which have got badly mixed from my frequent and prolonged absences. I hope the doctor will let me remain here, but I fear some fine morning he will pounce upon me and ship me South. I hoped this winter to continue my explorations of the coral reefs of the West Indies, and my experiments on the bathymetrical distribution of the surface fauna. I don't believe a word of all the pretty theories my German friends have. It's very strange how they always manage to find something at any depth they wish. My machinery never works that way, and as I have tried a hundred times to their once, I feel naturally very sceptical. But my scheme could not be managed this year, — no yacht to be had.

My Bahamas notes are now well written out, and I hope to get out this first contribution to the history of the West Indian coral reefs during the summer.

It is becoming very evident that the whole theory is pretty complicated and coral reefs have done far less work than they have been credited with, at least in the Bahamas.

My Reports on the Albatross Expedition of 1891 are making fine progress and I hope to get out this year ('94) the Holothurians and the Crustaceans. Both these Memoirs will have colored Plates, giving a good idea of the looks of many of these deep-sea beasts. Dr. Pelsener wrote me the other day to ask for the Blake Spirula which you sent back, and for the life of me it cannot be found, it has been so admirably put away! — by some zealous person too orderly inclined.

My youngest son has managed to become engaged to a very charming girl from Philadelphia. I am somewhat taken aback; not having had any experience with daughters I hardly know how to behave. So far it's a very delightful experience.

After his visit to the Bahamas it was natural that Agassiz should turn his attention to the Bermudas; writing from Cambridge early in 1894, he says to Murray of this proposed visit: "So far I have managed to stay here without any great detriment and am getting fat on it. But the doctor does not think it very safe for me to stay much longer, and by the middle of next month I'll make a visit to the Bermudas."

He spent nearly a month there, examining the structure of the group and concluded that the Bermudas offered an epitome, as it were, of the physical changes undergone by the Bahamas. The following letter gives an excellent idea of his views on the formation of this region: —

TO SIR JOHN MURRAY

HAMILTON, BERMUDAS,

March 12, 1894.

I've been here nearly a couple of weeks examining the islands and running out to the reefs whenever the weather will allow. I've had so far not many pleasant days. March is nearly as windy here as at home, but of course far preferable. There is an excellent tug of which I have the refusal every morning ; this has enabled me to see a good deal in a very short time. I've made four sections across the reefs and am quite satisfied that corals here have had still less to do with the present configuration of the islands than at the Bahamas. The problem here is practically the same, but the corals are so unimportant an element in the so-called reef as to form practically the thinnest kind of veneer over the ledges of æolian rocks which form the so-called Northern, Western, and Eastern Reefs.

The Northern Rock, Mills Breaker, and a lot of rocks which are awash, are all of æolian formation, the remnants of the former Proto Bermudas land when it occupied the greater part of the bank as an oval highland full of æolian hills which have been eroded and eaten away, and left the ledge on which the thin veneer of corals, Alcyonoid, and Millepore have built. All the patches between the outer reef and the islands are similarly fragments of the former land coming within the five fathom line quite close to the *LWM*, many of them, and veneered in the same way. That these patches are nothing but sunken islets and ledges can be plainly seen anywhere along the north and south shores, where they are still actively forming, especially on the south shore,

where the so-called reef is nothing but a series of islets and ledges overgrown by Serpulæ and Algæ, which, in the long stretch from Tinker's Farm [?] to the Gibb's Hill Bay on the south shore, form no end of atolls, barrier reefs, and crescent-shaped reefs. But the rising rim

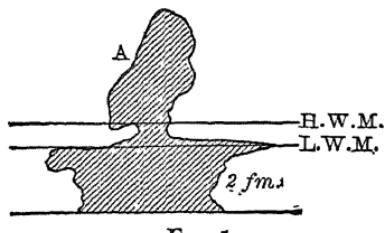


FIG. 1

is *not* formed by the growth of the Serpulæ. The outer edge is merely protected by Serpulæ and Algæ, and the surf breaking over that protected edge digs out a deep hole and thus are formed potholes (atolls) or crescent-shaped reefs, if there is an outlet broken out, or a barrier reef if it is a shore ledge which is acted upon by the surf.

I had before seeing these little atolls always supposed the vertical walls were built up by the Serpulæ, but it's no such thing — four to six inches is the highest Serpulæ thickness I've found, and everywhere where I have looked into the rim of an atoll, etc., it has always been made up of *œolian rocks*! — the walls left by the eating and scouring of the surf on blocks of *œolian rocks*, of all shapes, after they have been reduced to the line of the sea. This will show you my idea: —

When the rock *A* [Fig. 1] is cut if at *H W M*, it

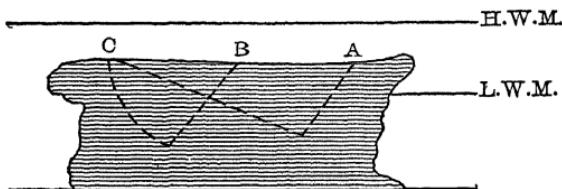


FIG. 2

leaves a flat ledge at *L W M*; the block *A* falls to one side and is, according to its size and thickness, then acted upon by the surf and breakers, and disintegrated accord-

ing to the angle at which the strata meet the sea, and may in its turn form one of the Serpulæ atolls or knobs. The ledge which is left [Fig. 2] below *LWM*, composed

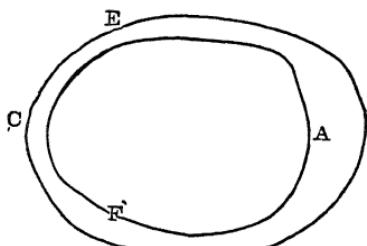


FIG. 3

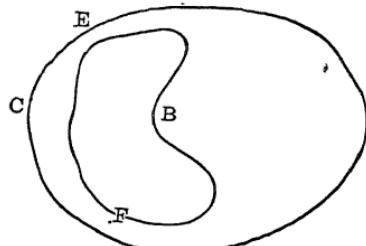


FIG. 4

of æolian strata which have been cemented together by the solving action of the sea, is coated by a hard crust. Algæ and Serpulæ and all the beasts of a Serpula atoll are already growing upon the ledge. But as soon as the water instead of playing round the ledge begins to break upon it, it will soon eat away the softer part of the interior, or where not so well protected and, according to the slope of the strata of the ledge, will form an atoll if horizontal, if a little inclined a crescent-shaped reef, and if it is a thin ledge a barrier reef, as per sketches.

From horizontal strata the Algæ and Serpulæ may cover the bottom slope *A C* or *B C* [Figs. 3 and 4], but if the surf is too great the sides *E F* are broken off, and thus are formed isolated broken walls of all shapes and outlines. [Fig. 5.]



FIG. 5

If the strata are dipping and in the same block, we may have, as in all æolian rocks, strata dipping at all angles, which will account for the diversified shapes.

The mushroom rock is eaten away, or rather pounded away, along the line *A C* [Fig. 6], leaving a crescent-shaped wall at the level *A*, and the water all falls out at *C* [Fig. 7].

At the foot of a vertical cliff a ledge is frequently formed [Fig. 8], and the surf during low tide pounds over *A* and cuts away all the dotted part *A C*, forming a regular barrier reef at the foot of the cliff, with as much as eight feet in one case, a regular slope from *A* to *C*. If this slope is protected by *Algæ* or *corallines*, it is not eaten away, otherwise it may make a pothole inside the wall. Then vertical walls are of all shapes, winding around and twisting, forming all kinds of reëntering curves [Fig. 10].

Now before I had seen these *Serpulæ* atolls, I had come to the conclusion that the

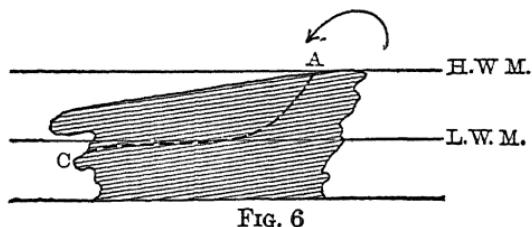


FIG. 6



FIG. 7

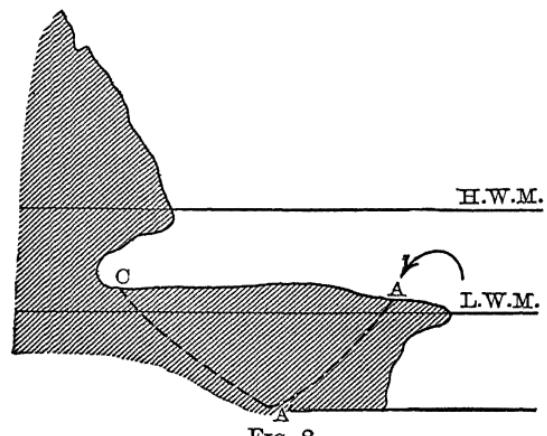


FIG. 8

Hogsty Reef (atoll) [Fig. 11], five miles by two and a half, had been formed by the scouring of the surf, just

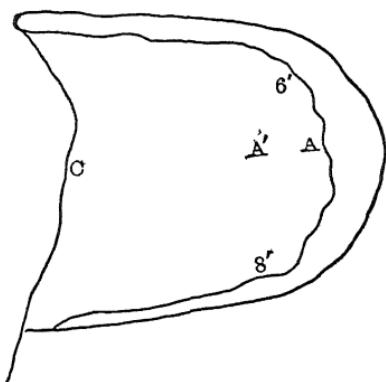


FIG. 9

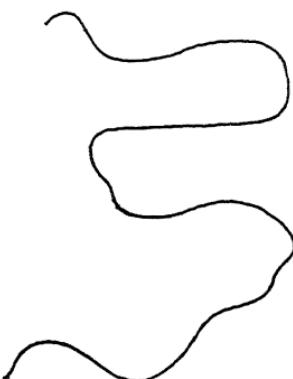


FIG. 10

in the way represented by the preceding crescent-shaped reef (Serpulæ Algæ atoll). The corals had grown and formed a barrier over which the surf broke and dug out the atoll. But the atoll was not formed by the growth of the coral during subsidence, as it is only a few feet thick on a sub-basis of æolian hills which have disappeared, and when that bank got a proper depth for corals, they flourished. One thing is very plain, that while to subsidence the present configuration of the Bahamas and Bermudas is due, that is a very different thing from saying that the reefs which surrounded the islands and banks as a thin veneer

are the cause of the forming of the atoll-shaped islands keeping pace with the subsidence, when a

few feet below the coral is found the æolian rock !!

I don't yet know what my plans are to be this early



FIG. 11

summer — the Dolomites or Calumet — I much fear the latter.

Agassiz always intended to pay a visit to the Dolomites and see for himself if these limestones are coral reef rocks, as some geologists assert; but though the excursion was frequently contemplated, something always arose to prevent its actually taking place. On this occasion he developed some trouble with his throat, and the doctor considered that it would be unwise for him to go abroad and attend scientific meetings, so he spent his summer quietly at Newport writing up his reports on the Bahamas and Bermudas.

Agassiz's previous conclusions as to the probable method of formation of the lower coast of Florida were upset by his exploration of the Bahamas and Bermudas. In order to make a further examination of the Florida reefs he chartered the Clyde, an ordinary small tug with four berths in the cabin, which were occupied by the Captain, the Engineer, his son Max, and himself. He joined the boat at Key West in the middle of December, 1894.

ON BOARD THE TUG CLYDE,
OFF KEY WEST, Dec. 22, 1894.

“ We are already halfway nearly down from the most northerly point, Key Biscayne Bay. We have had splendid weather so far, except last night going from Elliott Key to Cape Florida it was pretty rough for a couple of hours, but Max and I stood it well. I am more than pleased to have taken this trip. I shall have to modify my views on the Florida reef greatly and never could have done it had I not seen the Bahamas and the Bermudas.

We have landed on the way up at all the interesting points on the Keys—and on the way down I am taking the outer reef and the reefs in the intervening channel.

When up at Key Biscayne it suddenly came across me that I had not been there since I was quite a small boy in the winter of 1850-51, when I distinguished myself by falling down the hatch of a Coast Survey vessel and being picked up for dead and laid out on the sofa of the cabin, where, however, I soon came to and have been pretty lively ever since. We then examined pretty nearly the same rock exposures I examined then in Father's company, only what he saw, and which I supposed he had seen, does not exist—but no one who has not seen Bahamas and Bermudas would have written differently. I have found the old reef which runs all the way from Key West to Key Biscayne, which has been elevated just like the Cuban reef, but only not more than six to twenty feet at the outside. Everybody has looked upon this inner reef as similar to the outer sea-faced [reef] formed in the same way. What I said about the Tortugas is, I think, all right, for I was not then looking at the Keys in the eyes of what had been dinned into me by Father."

On this expedition Agassiz was surprised to find that Lower Matecumbe Key was edged by a slightly elevated coral reef, which he was able to trace as far as the keys off the central part of Key Biscayne Bay. From his present investigations, combined with the results of the borings at Key West, he reached the conclusion that in Pliocene times the landward extension of what is known as the Pourtalès plateau stretched in a series of bars and flats from the outer reef of to-day many miles inland of

what is now the coast line of the mainland. On these bars and flats corals began to grow in post-Pliocene times, and as the thickness of this reef is not over fifty feet, the greatest depth at which the corals began to grow was probably considerably less than the greatest depth at which corals are known to thrive.

The reef was slightly raised and then eroded, leaving patches of elevated reef and coral sand beaches; this sand has been blown up to form the æolian rock of the keys, which has solidified into hard ringing limestone by the action of rain or sea spray, while the coast line of the mainland he believes to have been formed in a similar way. He believed that the sounds that separated the keys from the mainland are due to the mechanical and solvent action of the sea, while the ship channel separating the outer line of reef patches from the main line of keys probably represents a sink of greater extension which the currents have swept clean and subsequently deepened. "Finally, it is upon the remnants of the old elevated reef that the present growing reef flourishes, forming, as it does in the Bahamas and Bermudas, a comparatively thin crust upon the underlying foundation rocks, which are now known to be Pliocene, and which occur at a depth considerably less than that at which reef corals are known to grow."

Griswold and others are of the opinion that the oölites of the mainland were laid down under water. Agassiz, on the other hand, considers them æolian, and explains their stratification by the action of rainwater containing carbonic acid on successive layers of coral sand, more or less mixed with quartz sand. The rain would take up a little lime, and on evaporation would

form successive crust lines of demarcation between the various layers of sand.

Agassiz again visited the region in 1908, when the quarry back of Miami and the cuttings of the railroad to the south had made some interesting sections which furnished material not available on his previous examinations. The results of this expedition were never published, but from his notes there seems no reason to believe that his views of the formation of that part of the Peninsula were materially changed.

CHAPTER XIV

1896

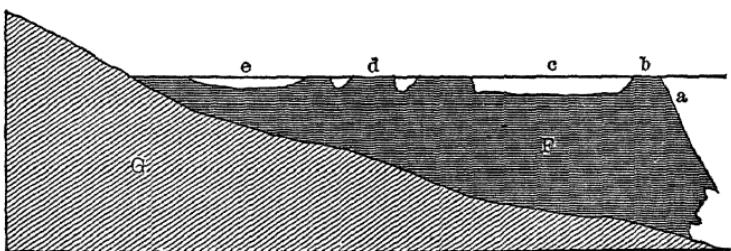
THE GREAT BARRIER REEF

AGASSIZ selected the Great Barrier Reef of Australia for the goal of his next expedition, as he wished to determine whether the causes instrumental in creating the coral regions about the Antilles were as local as some of the scientific men of the old school believed. This great reef, stretching for hundreds of miles along the north-eastern shores of the island continent, seemed an excellent place for the purpose. Not only had Darwin especially cited the Great Barrier Reef in support of his theory, but J. B. Jukes, who visited it in the Fly, also concluded that the formation of the reef was due to subsidence. Judging from a magnificently illustrated volume on the Great Barrier Reef which appeared in 1893, W. Saville Kent also seemed to believe that the theory of subsidence must be true, because it had been adopted as an elementary axiom in the "leading Australian handbooks."

"The Voyage of the Fly," published by Jukes in 1847, gives a remarkably accurate description of parts of the reef. In order to explain its formation by Darwin's theory, Jukes makes use of the accompanying imaginary section.

Since reef-building corals will not grow much below twenty fathoms, the great mass of coral rock *F*, which the theory demands, could not possibly have been formed by corals growing up from the bottom. The supporters

of the theory, therefore, assume the land to have been higher at the time the corals began to grow, than at present, so that the coast line then reached the line of the outer reef *b*. As the land gradually sank, the corals grew up, keeping pace with the incursion of the ocean, finally producing the tremendous buttress of coral rock



- a.* Sea outside the barrier, generally unfathomable.
- b.* The actual barrier.
- c.* Clear channel inside the barrier, generally about fifteen to twenty fathoms deep.
- d.* The inner reef.
- e.* Shoal channel between the inner reef and the shore.
- F.* The great buttress of calcareous rock, formed of coral and the detritus of corals and shells.
- G.* The mainland, formed of granites and other similar rocks.

that overlies the sunken land, and stretches out from the present shore line.

Agassiz began the preparations for this expedition months in advance, and every detail was most carefully thought out and provided for. Indeed, he exercised the same careful forethought in the organization and equipment of all his cruises. Knowing the labor and care necessary to arrange for what he called "one of his own little trips," he was always amazed at the work it must have required to fit out for such a voyage, for example, as Nansen's exploration in the *Fram*.

A small cargo steamer, the *Croyden*, was chartered

from the Australasian Navigation Company. Suitable quarters for Agassiz and his assistants were built into the boat; she was fully provisioned for two months, and arrangements were made for insuring a supply of coal at points where it would be needed along the coast. Captain Tanner kindly took charge of the building of a sounding machine and deep-sea nets for the expedition. These, with a complete and extensive outfit for pelagic fishing, were forwarded in advance to Sydney. In the midst of the preparations Cleveland delivered his Venezuela message, which for the moment so strained the relations between the United States and Great Britain. The owners of the *Croyden* at once telegraphed, asking for a release from their contract owing to the prospect of war, but Agassiz telegraphed back laughing at their apprehensions. Through the State Department he obtained, from the Foreign Office in London, letters to the Governor of New South Wales and the officer administering the Government of Queensland, so that he everywhere received much courtesy, and every opportunity was offered him for carrying on his work.

Three assistants, Dr. W. McM. Woodworth, Dr. A. G. Mayer, both then members of the Museum staff, and his son Maximilian, accompanied Agassiz, who left for Australia via San Francisco early in the spring of 1896, reaching Sydney in the midst of the four or five days of Easter holidays. The *Croyden* was in dry dock waiting for her finishing touches, and he was much exasperated to find that nothing could be done till the end of the holidays. While waiting he made an excursion into the interior, where in common with other travellers he felt the dreary monotony of the great Eucalyptus forests, ran across a drive of wallabies, and had the luck to

see what the Australians call their bear, a tree kangaroo. He was much interested in some of the valleys so characteristic of Australia, whose structure has greatly puzzled the older geologists, but which he speaks of as simple enough to an American who has seen the large and small cañons of Colorado and elsewhere. Meanwhile the Croyden had started for Brisbane, where the party went by rail, joining the ship on April 16.

ON BOARD THE CROYDEN,
TOWNSVILLE, QUEENSLAND,
April 22, 1896.

“To-morrow A.M. we put into Townsville where I shall mail this letter. We left Brisbane the 16th, P.M., and ever since until to-day we have had beastly weather, much worse than anything between San Francisco and Sydney. We dropped right into it [rough weather] the night of the 16th and by next A.M. made what is called “Wide Opening,” which is seventy miles from Brisbane, and cut off about fifty miles of outside sea, so we had peace for breakfast, and anchored in the evening at the lighthouse of Break Sea Spit; then we went ashore, saw some natives, and after dinner put to sea so as to reach Lady Elliot Island, the southernmost reef, by daylight. When we got there it was blowing hard and raining, so there was no landing possible, and we kept on, passed the Bunker and Porcupine Islands, which are rather peculiar reefs, without chance of seeing them. So we put in for the night at Keppel Bay, where we had a good night and quiet dinner. The next day we remained there hoping for a change of weather, but none being in sight, we left at night for the next anchorage, the Percy Islands. When we got there we

were no better off, heavy sea running and no chance to see the reef, so we kept on to Whit-Sunday Passage, where we got yesterday A.M.

I fear I have brought a great deal too much material and supplies of all kinds, for unless the weather is very different from what it has been, and all say it will be, I cannot hope to do anything outside, and my reeling engine and sounding machine will be very little used. For such a long trip and so many men a larger vessel is wanted; there is no storage for one's clothes in the cabin — all has to be kept in valises and trunks and we have each one shelf to place the most urgent material. The food is very fair and the vessel an excellent sea boat. We are now in latitude 20 and it's getting warm, and pretty warm in the cabin at night."

TO MISS E. H. CLARK

ON BOARD THE CROYDEN,
CAIRNS, April 26, 1896.

Bad weather seems to pursue us since leaving Townsville. We have only had one really good day for work, and of course the day we spent coaling was perfect. Still the time is not all wasted, and I am learning a little something nearly every day. We manage to get a few things to look at from the beaches at low tide, if they are accessible, and land on the Islands when we anchor, where I devote myself to the rocks, Woodworth to collecting on the beaches, and Mayer to insects, and both Max and Woodworth bring their cameras in case there is anything of interest to photograph. Still I am getting frightened at the little work that has been accomplished thus far, and unless in the next month there is a radical change for the better, the expedition will be

noted as a failure. Still it won't be for any fault of mine.

We got this afternoon late to Cairns, but have not yet been ashore; the place as seen from the sea is quite attractive, stretching along the beach with plenty of trees separating the low houses. Our coming in caused quite a sensation — the population was evidently just coming out of church and they all flocked to the wharf to see us come to an anchor. The Captain has gone ashore to see the authorities and to make arrangements for our going to see the Barren River Falls, which are the most noted falls in Australia. Of course if the wind lets up we go out to the reef, which is only about twelve miles off from our anchorage. But to-night there seems to be no prospect of such good luck.

ON BOARD THE CROYDEN,
OFF THE LARK PASSAGE,
May 5, 1896.

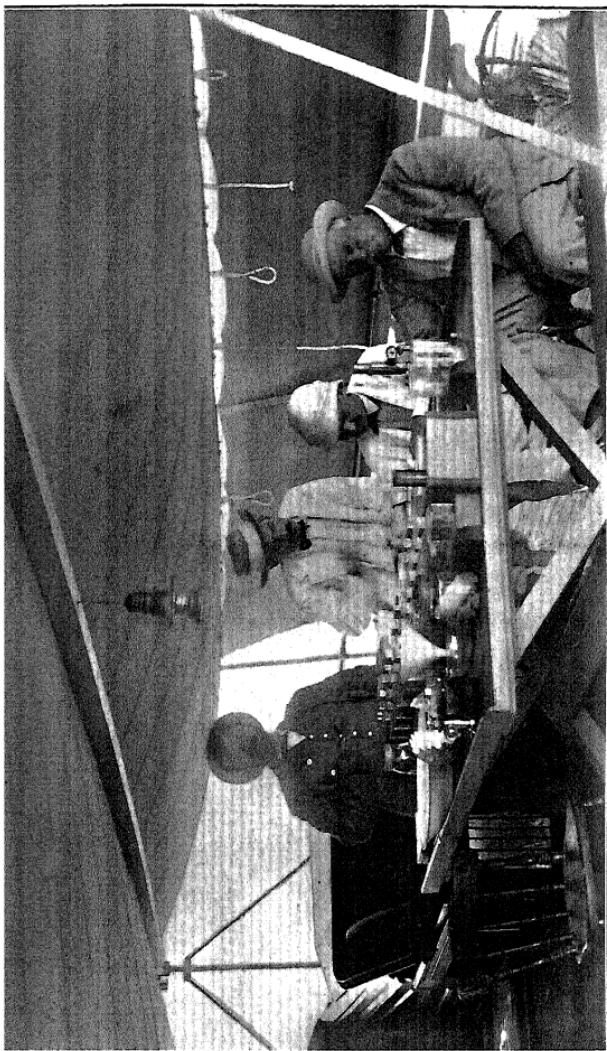
“At last we got off from Cairns last Sunday afternoon, after having wasted a full week there at anchor doing absolutely nothing except the little occupation we manage to get from drawing a rather interesting jelly-fish which seems to swarm up in the estuaries of the Australian coast. Had we been weatherbound at any other port we would have fared better, as there would have been the railroad lines running inland, some of which lead to interesting mining districts where I could have spent some time profitably looking at mines. On getting away we had an excellent sight of the reef on the southern side of Trinity Opening, which showed nothing remarkable. The night we spent running north towards Cooktown; we had a good passage, then after breakfast attacked the two inner patches leading to the

‘Lark’ Passage. There I began to have my eyes opened, and to get an explanation of the formation of the coral flat reefs. So that was most satisfactory ; on the weather side of one of these reefs we got a glimpse of the corals, which were simply wonderful in the way of coloring, nothing like it have I ever seen. I wish one could get a photograph or a picture of such a brilliantly gaudy reef, but that is hopeless. While we were laid up at Cairns we also lost a set of very low tides on which I had depended to get some such fine photographs as those of Kent.

We are anchored for the night just under the lee of the thin line of the outer reef, upon which the surf is thundering. To-morrow morning we intend to go outside if the sea is not too heavy and do a little sounding and deep towing. We set up the sounding machine to-day and are ready to use it now. I shall depute Max to run it, for I hardly trust any of the men. They are none of them very handy and the boat men especially are pretty awkward, and my only safety lies in having Max at hand ready to take hold.

As we were off Cooktown we saw the missionary steamer, John Williams, go into the harbor. She has just come from New Guinea, and we hope to pick up quite a lot of New Guinea curios when we put into Cooktown, which will be as soon as the weather compels us to do so. We are going to try and examine all the reefs within fifty miles of Cooktown before we refill our water tanks and lay in the last supply of ice we shall indulge in till we get on board the Ocampo for Hong-Kong.

“ May 9th — Cooktown. Got here last night after a few hours of work only and the rest fighting against the trades. After all, the Admiralty was right — this is



LABORATORY ON THE DECK OF THE CROYDON

no time to come. It is just as I feared in the region of trades — while they blow, nothing can be done, and you get here and there a good day. With the prospect of wind before us, it is hopeless to do anything till end of *July!* Hereafter I shall stick to Admiralty advice. It's a bitter experience to have wasted so much time and accomplished so little after all this flourish of trumpets. But I shall be glad to get home and turn down this leaf of failure and forget all about it in the pleasure of getting back."

TO SIR JOHN MURRAY

ON BOARD THE CROYDEN,
COOKTOWN, QUEENSLAND,
May 16, 1896.

I am thankful you did not come and join this expedition, as I hoped you would. I have never been connected with a greater fizzle. Since we left Brisbane, more than a month ago, we have had just five days of good working weather. The corals here are superb, and I had no conception from the West Indian reefs of what a reef can be. The gigantic masses of the Astraeans, Meandrina, etc., dwarf the largest masses of the Florida and Bahamas, and all within six to seven fathoms, so that with a water glass one can see the whole reef. The most striking characteristic is the absence of Gorgonians, which form so marked a feature of the West Indian reef. They are replaced by the Alcyonaria tribe and by the sponges and huge Actineans, the like of which I have never dreamed of till I saw them figured in Kent's book. Why he advised me to come here during the time of the trades I cannot understand. Wharton¹ warned me about

¹ Admiral Sir W. J. L. Wharton, of the Hydrographic Department of the British Admiralty.

the trades, and I knew enough of trades to know that when they blow very little can be done. Yet when I cabled Kent he reaffirmed his opinion, and got Wharton to agree with him to boot.

All captains here say I should have come in November and December before the hurricane season when every day counts for work almost. It is hot then but calm, now it is not hot and anything but calm. It is aggravating, to say the least, to lead such a failure, and the more so, as I never went on any expedition better equipped in men and material, and hoped besides the reef examination to make a great collection of pelagic material. But I hauled twice only, and then it was blowing so hard that in so small a boat as the Croyden I did not dare to do much for fear of carrying all my tackle away the way she rolled and pitched. I have, however, seen enough of the reef to satisfy myself of its mode of formation, and I fancy the subsidence people will not have much ground for support. It is very much like the Florida reef, only on an immense scale.

I intended to have pushed through to Thursday Island, in spite of the bad weather which everybody who knows anything prophesies, but the steamer I was to take at end of May from there for Hong-Kong has been lost in China Sea and is replaced by a cargo steamer carrying no passengers. The same is the case with the Batavia steamers—they take no passengers; so that unless I could stay till end of June there was no chance of my getting away from Thursday Island unless I was prepared to buck five hundred miles of trades in a small steamer of little power, like my boat. That I could not see my way to do. So I give up the trip and go back via Naples, the 27th.

It is fortunate that there is no one except myself on whom this failure falls, and that I have not to account for such a miserable expedition to any one, so that I can now turn down this wretched page and think no more of it except when I write a few pages giving an account of the trip. I have had a pleasant yachting trip and am very sorry for my two assistants whom I hoped would gather no end of pelagic stuff to work up when they got home. They have taken it very good-naturedly, for it's no joke for them to lose, as they have done, five months of other work.

Agassiz's reasons for disagreeing *in toto* from the opinion of Jukes that Darwin's theory was applicable to this region may be summarized as follows: In the first place, the "unfathomable depth" of the sea outside the barrier, of which so much is made in coral-reef discussions, simply does not exist. The slope outside the reef is, in fact, more gradual than the outer slope of the extension of this great continental plateau farther south, where there are no corals. Furthermore, the space between the outer reef and the present coast line is studded with islands, which would give Jukes's imaginary diagram an entirely different aspect, as it would show a series of peaks cropping out and connected with the mainland *G.* (p. 311.)

The deeply eroded flanks of the coast mountains, the existence of extensive high table levels, characteristic of the adjacent islands also, convinced Agassiz, when taken together, that the coast of Queensland has for a long period been subjected to a very extensive denudation and erosion, and that the islands were once a part of the mainland. This supposition is fully confirmed

by what is known of the geology and botany of the mainland and the adjacent islands. Many of the more distant remnants of the former mainland are now mere islets flanked by extensive flats, or they are simply flats eaten away to beneath low-water mark.

He was thus led to the conclusion that all the flats and reefs lying between the outer line of reefs and the mainland are but the remnants of former islands extending to the eastern edge of the continental plateau, islands which once formed a part of the eastern coast of Queensland, but which have by erosion and denudation gradually been separated from the mainland and reduced to the flats forming the outer reef flats of the Great Barrier Reef.

The reports of the Queensland colonial geologists seem to prove that there was a very considerable subsidence in Cretaceous times, followed by an elevation of the beds then laid down, as exemplified in the desert sandstones. The outlines of the present coast line and its submarine extension Agassiz took to have been shaped by this subsidence and subsequent elevation, and by the erosion and denudation to which these beds, since their elevation above the level of the sea, have been subjected for so long a period. It is on the upper part of these submarine slopes, of a former geological period, but modified by erosion and denudation up to recent times, that during the present epoch corals have obtained a footing and built up the Great Barrier Reef of Australia. Thus, instead of Jukes's tremendous buttress of coral, there should be but a comparatively thin veneer of coral rock overlying the denuded land.

Certain puzzling peculiarities of the reef Agassiz explained as follows:—There is every reason to believe

that the outer strips of flats, now worn to below the level of the sea, were at no very distant time (geologically) covered by a reef which was elevated from ten to twelve feet above the highest level at which corals are now growing. Gradually this elevated reef was eaten away by the action of the sea, and this accounts for the small fragments of dead coral which are scattered over the outer reef flats. On the inner reef flats, where the process has not gone on quite so long, he found the elevated reef eaten into "negro heads;" while yet nearer the mainland there are still portions of the reef that have not been so eaten. Thus the upper part of the present reef may be said to form a crust over the dead and denuded elevated reef, which forms the core of the reef.

The same erosion and denudation that formed the great submarine plateau of Queensland, undoubtedly has separated North Queensland from New Guinea, and left the shallow continental shelf stretching between them. Finally, he concludes that if the Cretaceous subsidence and subsequent elevation of the beds then formed in Australia could be traced sufficiently far to the eastward, the same erosion and denudation of these beds would go far to explain the existence of the banks, islands, and archipelagoes of the Southern Pacific.

CHAPTER XV

1897-1898

THE FIJIS

As soon as Agassiz had returned from Australia, he began to consider what region would be best suited for a further investigation of coral reefs. With the advice of Dana and Admiral Wharton, he selected the Fiji Islands, for they appeared to be remarkably rich in a great variety of coral formations. At once he started preparations for the voyage. He chartered from the Australasian Navigation Company the steamer Yaralla, of about five hundred tons; Captain Thomson, who had commanded the Croyden, was again put in charge. The summer before he left, all his equipment and materials for preserving his collections were shipped direct to Sydney. He also planned to take with him a number of the various self-closing nets known to the scientific world, in order to compare them with his old love, the Tanner net.

While these arrangements were in progress, he spent the spring of 1897 in visiting the last of his unsuccessful mining ventures in Mexico. Three days on horseback from the picturesque little city of Culiacan brought him to the mine. On leaving, he continued his journey across the mountains to Jimenez on the Mexican Central Railroad; and from there went to the City of Mexico to arrange some business matters.

TO SIR JOHN MURRAY

CAMBRIDGE, May 16, 1897.

On my return from Mexico I find yours of the 9th of February. I have been way up on the west side of the great Mexican Plateau, anywhere between 8500 and 9000 feet, riding mule-back, camping out and living outdoors and getting into fine shape. I am now as tough as the mules I've associated with, but I hope not as obstinate! Food was not all that was desirable and our cook, an old cowboy, would not pass as a French chef. Max and a friend of mine composed the party; we were all ready for anything, and finally managed ten to eleven hours in the saddle a day without being the worse for it. I quite regretted getting back to civilization. I move to Newport to-morrow, when I shall try and finish my Australian Report before starting for the Fiji. All my preparations are now made for that. I have a fine twin screw steamer, 200 feet on water line, lots of room—she will meet me at Suva end of October. I am going to have a launch and take with me a boring apparatus and the most skillful man of the Diamond Drill Company. We go prepared to go to 350 feet, and I shall put a hole in an elevated reef and in the edge of an atoll if I can find solid ground anywhere to start. To obviate difficulty of water supply, I take a kerosene motor with me to run the Diamond Drill. The company are of course interested in the success, and they say that the man who goes with me is noted for always landing on his feet. I take with me the same assistants I had in Australia, and trust we shall have better luck. Still I am going prepared to be more or less disappointed. I have just published a fine Monograph on Crinoids by Wachsmuth and Springer,

which you will get in due time. Also a Memoir by Milne Edwards on some more of Blake Crustacea, and a Memoir by Maas on the Albatross Medusæ, which should come out shortly.

The members of the expedition left Boston on October 9, 1897, to join the *Yaralla*. The evening of November 6 saw them at the little town of Suva, the capital of Fiji, with its one street of shops, set in a great sweep of low sharp hills, their slopes thickly wooded with tropical vegetation. Here they found the *Yaralla*, which had been waiting for ten days. The next morning, Agassiz went ashore to present his letters to Sir George O'Brien, the High Commissioner; here he found in Mrs. Allardyce, whose husband was in charge of the native Department, an old acquaintance with whom he had once made a passage from Bombay to Naples. In the midst of his scientific notes one finds, as unexpectedly as a joke in a mathematical table, the following entry: "Went to see Mr. Allardyce—queer to see man servant with nothing but a loin cloth round him—he served tea to us and two lady callers!"

Agassiz supposed he must be coming to a characteristic area of *subsidence*, since, according to Darwin and Dana, there is no coral reef region in which it is a simpler matter to follow the various formations. For this reason he had thought that one of the atolls here would be an excellent place for boring to decide the thickness of the reef. The preceding letter to Murray suggests, however, that his surprise could not have been entirely unexpected, when he found, a mile out of Suva, an *elevated* reef about fifty feet thick and one hundred and twenty feet above the level of the sea!

Agassiz was fortunate in securing the services of Captain R. Cocks as pilot, especially recommended by Sir John Thurston, the late Governor of the Fijis, who had taken the greatest interest in the plans for the expedition. This pilot proved invaluable, as he knew every nook and corner, and just what to do in any emergency. The inset in Chart 2 at the end of the volume shows the track of the *Yaralla*. It comprised practically all of the group, with the exception of some of the outlying islands, and the region to the north of Viti Levu, the largest of the islands, on the south of which Suva is situated. Vanua Levu, the other large island, the ship merely grazed as it steamed through Somo Somo Strait.

Leaving Suva on November 8, the *Yaralla* made for Mbenga, to the southwest of Suva, a volcanic island about five miles across, rising about fourteen hundred feet above the sea, and surrounded by a vast barrier reef some thirty miles in extent. Here Agassiz passed several days examining the reefs, and then started for Vatu Leile, the next island to the west. About halfway across, the weather began to look dirty and the glass started to fall so rapidly that it was thought best to put back to Suva which the ship reached just before the storm broke.

The next and longest run was so planned as to offer a study of at least one or two examples of each type of island, and of the different types of atolls, barrier and fringing reefs in the group. Proceeding through the group to the northeast, Agassiz then ran down along the line of smaller islands, which form the eastern or Lau group of the archipelago, and afterward worked his way westward back to Suva. The nights were usually spent at anchor, sometimes under the friendly lee of

a point, or perhaps between a barrier reef and the shore of the island that it encircled, close to some native village; while again the pilot, watching for shoals from the masthead, would guide the ship through a narrow passage between the breakers into some quiet lagoon; and once she anchored in the crater of an old volcano, whose giant walls towering about her formed the island of Totoya. Curiously enough, the Yaralla visited Oneata exactly fifty-seven years after Wilkes, the first steamer to go into its lagoon since 1876.

The opportunity of seeing something of the natives was not the least interesting part of the expedition. The English have had the good sense to leave them very much undisturbed, and allow them to go on as they always have, so they are among the finest examples of what the South Sea Islander was before he fell into the hands of missionary and trader. As the ship steamed along some island, with scattered huts lying in the shade of the palms that overhung sandy beaches, her appearance would cause the greatest excitement among the natives, who ran wildly along the shore as she passed. Anchoring at the mouth of some pretty little bay at whose head clustered a tiny village along a coral sand beach, the explorers would go ashore to find the whole village, clad only in loin cloths, waiting to receive them. The chief would lead them to his house of reeds, with its high stone foundation and steep thatched roof; entering, by means of a flat log, in which notches had been cut for steps, they would find themselves in a large room whose walls and roof were hung with tapa and matting. Some dozen girls, the top of their heads clipped and their ringlets entwined with flowers, would squat down on the floor and begin one of the curious chant-

ing songs of the country, shyly, at first, but warming up as they proceeded, clapping their hands to the rhythm, and swaying to and fro with all kinds of graceful motions of the arms and bodies. When the song was ended the men would be given tobacco — the women a few trinkets or a little money, some of the boys looking-glasses, and with mutual good feeling the party would break up.

At night, when the ship came to her anchorage, the chances were that a canoe load or two of natives from some neighboring village might put off. They would be shown all over the ship, whose various wonders they saw with the greatest astonishment, while the kindly treatment they received evidently filled them with delight and surprise.

The following is an extract from Agassiz's journal written shortly before returning to Suva: —

“Have been working pretty hard ever since I left Suva, getting up at 5 A.M. to see what there was to be seen in going in and out of lagoons or anchorage ; used to have a cup of coffee and run round in pajamas till time to get ready for breakfast — to make up went to bed early, generally 8.30, and have never felt better in my life — sleep well as usual. Generally spend time after coffee measuring distances for the day's work or run, so as to make a programme and find shelter for the night ; everybody joins in and finally we get the most time available for work at any place, and only twice have we been scrimped for time, the two days when we made two long stretches dead to windward against a huge ocean swell, which cut us down to less than seven miles. This boat is an excellent sea boat against the wind, but rolls more than I like when going broadside to the sea.”

The Yaralla reached the harbor of Levuka, on the island of Ovalu, the night before the great swarm of Bololo was expected. Leaving the ship early next morning in a boat with a native crew, Agassiz and his assistants had scarcely reached Bololo Point, some two or three miles off, when the water became thick like vermicelli soup with this curious marine worm. The natives, who had gathered for miles in anticipation of the event, immediately put out in canoes, and men, women, and children waded out on the reef with nets and all kinds of utensils to catch the Bololo, which they consider a great delicacy, eating them raw or cooked with bread-fruit. After a time the swarms vanished as suddenly and mysteriously as they appeared.

This great swarm always occurs in the last quartering of the moon in November, and is eagerly awaited by the natives, who can tell by certain signs when to expect it. Only recently had this curious phenomenon been called to the attention of naturalists. It proves to be the marriage swarm of a species of marine worm, living in the crevices of the neighboring coral reef, who throw off their sexual segments into the adjacent waters. After the discharge of the sperm of the males and the ova of the females, nothing is left but shrivelled transparent skins, hence their sudden disappearance.

TO SIR JOHN MURRAY

ON BOARD THE YARALLA,
SUVA, Dec. 3, 1897.

Hurrah! I have been and gone and done it, as we say in Yankee slang. We have just come in from nearly a month's trip round the islands of the Fijis, and a more interesting trip I have never made. I have learned

more about coral reefs and islands than in all my expeditions put together, and it looks to *me* as if I had got hold of the problem of deep [lagoons of] atolls, and of the history of the coral reefs of the group. But I'll not go into details now except to say that I am more than ever satisfied that each district must be judged by itself, and that no such sweeping theory as that of Darwin can apply to coral reefs as a whole, or even to atolls. I don't believe from what I have seen that a single atoll in the Fijis has been formed by subsidence!—Darwin and Dana to the contrary notwithstanding. This is eminently a region of elevation at least to *eight hundred feet!* and subsidence has never shaped the reefs here. Without my experience in the West Indies, etc., it would have been impossible for me to have got a proper and correct idea of the Fiji Islands and their reefs. But I will not go into details until I get through here.

I only hope I shall have as good weather as we have had, not a day lost, working hard from 5 A.M. till we came to anchor for the night, and often steaming at night the huge stretches to save time. The Yaralla has proved herself eminently well fitted for this kind of work, and had the Croyden, in which I cruised along the Barrier Reef, been as good a boat, I could have bucked the trades and felt safe as I do here. She is very comfortable; we are well cared for, and have all been getting as black as the natives, from whom we can only be distinguished by the amount of clothing we wear! Besides coral work, we have greatly enjoyed seeing the natives in their villages, of which we have seen some of the best specimens. The islanders are the most friendly, jolly, and hospitable people, fully up to jokes, and most grateful for the smallest kindness. We

were daily overwhelmed with them, and sent them off usually happy and full of food and presents.

The scenery is also very beautiful, so that all in all we are enjoying every minute and glad to have done the outlying and most distant parts, so that now we shall be within easy reach of Suva in case of a blow.

I left my party for boring at Wailangilala, where they are well settled for six weeks; when I left them they had got going to eighteen feet in *sand*. But I look upon this boring as a mere experiment. Boring to be of any good must be in a recent coral reef like that of Florida or a fringing reef like that of Honolulu — where outside conditions have had no influence, and I shall tackle that some time and some where.

By the way, David, in a letter I find here, says the *reef proper* was only forty feet!¹ Judging by the reporters' accounts in the papers, they made it the full depth of the bore, but I shall give them a dose they do not expect, and the theory of subsidence will, I think, be dead as a doornail and subside forever hereafter.

The little island of Wailangilala, in the northeast of the group, seemed admirably adapted for the purpose of boring; a low tiny island about five cables long, covered with shrub and cocoanut trees, that rose on the northeastern rim of a reef of the same name nearly nine miles around, enclosing a roughly elliptical lagoon. The island had the added advantage of having a light-house whose keeper was able to furnish shelter for the boring crew. Here a party of three white men and four natives was landed with the boring apparatus and pro-

¹ Refers to the boring made at Funafuti in the Ellice Islands, which will be mentioned later.

visions, while the Yaralla steamed away, to return and pick up the men later.

On going back to Wailangilala, after he had seen something more of the elevated limestones so common in the group, Agassiz found the drill had reached the elevated limestone at a depth of about fifty feet, and stopped the work about thirty feet lower. For, as he says, "Of course it seemed foolish to go on boring here when it is so simple to get at the face and slopes of elevated reefs and study their composition *in situ* on a large scale and not from a core, reefs of which the underlying strata can be seen to be volcanic rocks as at Kambara, Mango, Fulanga, Vanua Mbalavu, and Suva Harbor and approaches."

The boring convinced Agassiz that the island was a fragment of one of larger size which once covered the whole area of the lagoon. For the northern extremity of the atoll was less subject to the destructive agency of the waves created by the southeast trades; so that here there was left a wider reef flat, upon which Wailangilala and another diminutive island represented the only dry land not worn away by the action of the sea.

Agassiz's next trip took him to the islands of Ngau, Nairai, and Ovalu, to the east of Suva, and included the tiny island of Mbau, close to the shore of Viti Levu, once the most important place of the Fijis, and crowded with houses. This was the home of the last great chief Thakombau, who ceded the islands to Great Britain.

After again touching at Suva, Agassiz proceeded toward Nandronga, whence he writes on December 8: "We got here this noon, our most westerly point, a pretty little harbor on the north coast of Viti Levu. The trip from the Mbenga passage has been most inter-

esting and has confirmed all I have seen elsewhere in the group. We are now going again to Vatu Leile, where we had no chance of taking good photographs, and then examine three or four little harbors between here and Suva, and then I *am done!* except towing."

TO WOLCOTT GIBBS

ON BOARD THE YARALLA,
SUVA, Dec. 15th, 1897.

Here I have been at work now nearly six weeks with only a couple days bad weather, and I have been most successful! It's by far the best coral reef expedition I've undertaken, and were I to stop to-morrow I should feel more than repaid for the time and outlay involved. We have seen a good deal of the natives in their villages and found them most interesting. They are jolly, hospitable, and friendly, and it seems hardly possible that it is scarcely fifty years since Wilkes and their great King, Thakombau, had such a row! We have lunched with his son who is a great swell (he does not look so), and who lives in the finest house in the Fijis (native house, of course). He enjoys a pension of £500 from the English Government. When we saw him he had just come back from a fishing trip, was dressed in a loin cloth, his hair daubed with lime, and his face blackened, and in every way was not a prepossessing figure.

I have learned more about the coral reefs during the past month than in all my previous expeditions, and think that I now understand the causes which have brought about the existing state of things (in coral reef ways) in the Fijis. Had I seen these islands I should not have come here to bore. Whatever results are obtained will not help to settle the reef question, and our

English friends who are howling for joy at the results of the boring in Funafuti will be greatly surprised when they hear from me. I shall send in a week to see how my man is getting along. I left him on a small atoll in the northwest part of the [Lau] group called Wailangilala; as long as he is there I will let him bore for another month, but his results will in no way affect the question. When I came here I took it for granted that Dana's and Darwin's premises about the coral regions of the Central Pacific were correct and that this group of islands (Fijis) was in an area of subsidence. You may judge of my surprise when I found that the Fijian is an area of elevation, and in one day I've seen more of the thickness of elevated reef than I could have in a couple of years of steady work. I cannot understand how Dana ever made such a mistake, for he was in the group quite a while, but Darwin's observations were all theoretical and based upon chartographic study in his house, a very poor way of doing, and that's the way all his coral reef work has been done. He never was more than ten days in a region of reefs and thought out everything he has written. I never could see how his theory has got such a hold with so little holding ground. I shall now finish my time by making excursions of a few days from Suva as a centre and be within hail of port in case of a hurricane.

ON BOARD YARALLA,
SUVA, Dec. 17, 1897.

“I was reminded this A.M. that I had turned the corner of 62! — by Max and Woodworth, who are arranging a dress dinner in the cabin for celebrating the day! Since I wrote you we have done a lot of odds and ends from Suva as a base, and have done quite a lot of deep

towing and bagged some very nice things. But I have given up all idea of testing the deep-sea nets ; it would take too long, and be too hard work ; for the same reason I have also given up soundings. Both that kind of work all falls on me and none of the party understands the management of the nets or of the sounding machine, and I have not got the courage to do all this myself. It's a very different matter to do it in the Albatross, where the officers and crew know just what is to be done ; but I am not up to it alone. We have been packing up our collections as far as we have got, and what with our specimens, utensils of natives, and corals which I bought, we have got quite a lot of boxes ready to go back, quite a contrast to the Australian trip, already about fifteen dozen hermetical vials of tow stuff ! We have already begun to dismantle some of the equipment which we are not likely to use again.

We had a most successful little trip this A.M. to celebrate my birthday. We started at 5 A.M. for Mbenga, the first atoll we examined on leaving Suva, but from which we were driven by a squall. We got there at breakfast, the sun out brilliantly, and we took a new set of the photos, which had miscarried the first time. I was quite anxious to have the photos, as the island is one of the prettiest, and most characteristic, of the group, and we had tried twice before to get photos without success.

You have no idea how prettily Max and Woodworth decorated the cabin with palm leaves and bright leaves and tree greens and masses of flowers. The ceiling was hung with all kinds of flags, so that there was not a particle of the woodwork of the cabin to be seen. Mayer got up some programmes, which were appropriate for each individual. . . .

The rain is coming down to-day in torrents and we are tied to the wharf — we have had nothing but rain — rain — rain, as it does in the tropics, but I am thankful for the good time we have had. We have been packing, and I have also looked over my notes and written out a little, enough to make a beginning of my report. We expect to go on shore the day after Xmas, while the Yaralla is off at Wailangilala. We have already sent a lot of stuff on shore to work, and have arranged very comfortable quarters at the hotel, shutting off one end of the piazza as a workshop and laboratory. We have kept the kerosene launch as a boat, and might, if the weather is decent, do a good deal of work on the reef flats, and towing. There are quite a lot of jellyfishes here. Our photographs have now all been developed and are very fair; between Max and Woodworth I ought to make an excellent selection for my final report."

Agassiz left Suva on January 13, and spent a few days at Honolulu. When there he was fortunate in being on the spot while Mr. McCandless, who made a business of diamond drilling, was boring an artesian well. Down to eighty feet nothing but recent reef coral rock was encountered, but from that point to a depth of over three hundred feet the limestone was of a very different character. It contained but few corals, being composed almost entirely of shells of mollusks. When Mr. McCandless's attention was called to this, he assured Agassiz that this lower limestone was identical with those he had spoken of to Dana and to him in 1885. This would seem amply to confirm Agassiz's contention that they do not belong to the same period as the superimposed corals.

Writing from Honolulu at this time (1898), he says: "They are now boring a well and have got down to 120 feet already, and have just got through the modern reefs and are now on what the contractor calls an old reef, which is nothing but a mass of shells. This practically knocks out all the evidence there was in favor of subsidence derived from the [previous] boring holes. . . . There are forty wells down 400 to 1100 feet, but unfortunately no samples of these worth anything have been kept. All that was limestone they have called coral, so that both Dana and I were fooled, he in one way and I in another, but I suppose that nothing I can now say will obliterate the things that have been said about these wells, and which mean nothing except complication of the subject."

Some years later he writes: "The borings for artesian wells passed through thirty to fifty feet of recent coral reef to enter Tertiary beds, in which a few corals were found, and which alternated with beds of volcanic ashes or mud. In the Tertiary beds Dana saw the continuation of the recent reef, while to me the Tertiary beds meant a succession of events which in no way affected the structure or mode of formation of the thin crust of the recent coral reef forming the fringing reef of Oahu, of Pearl Harbor, or of Kaneohe Bay."

Agassiz's study of the Fijis but strengthened his conviction that there is no general theory of the formation of coral reefs of universal application; each district must be studied by itself. In the Fijis, he considered elevation and subsequent erosion to be the causes that have fashioned the steep slopes of the islands and reefs, and not the thin crust of corals which thrive upon the reef flats forming the substratum of the modern reef.

This eroded substratum, slightly modified by the growth of the crust of recent corals found upon it, is in the Fijis composed either of volcanic material or of elevated limestone, whose sea faces, following the ancient slope of the land mass, represent its former extension.

The islands of Fiji may be divided into three classes — elevated limestone, partly elevated limestone and partly volcanic, and volcanic. As a rule the volcanic and limestone islands are easily distinguished at a glance, the gradual slopes of the volcanic peaks contrasting strongly with the flat-topped summits and precipitous cliffs of the limestone islands.

The limestone cliffs, many hundreds of feet in height, plainly attest a great upheaval of the region ; while the outlines of the islands, deeply furrowed by gorges and valleys, the sharp and serrated ridges separating them, the fantastic outlines of such peaks as those of Viti Levu and Vanua Levu, and others, all attest the extensive denudation and erosion that has been going on in the group for a very considerable period of geological time.

Since the volcanic islands would naturally be eroded to a less extent than the limestone, it is not surprising to find that the larger islands, like Kandavu, Taviuni, and Ovalau, are of volcanic origin ; while some of the limestone islands have been almost entirely eroded. So that of many which once occupied the area of present lagoons, like Ngele Levu, there is left only here and there a small island to attest the former existence of the more extensive elevated limestone, that once covered the whole area of what is now an atoll.

The elevated limestone islands, such as Maiau, Tuvuthá, and many others, with bluffs of coralliferous limestone, have been by some considered as elevated fossil atolls

because of the existence of a depression on the summit which was looked upon as the remains of a lagoon. Agassiz, however, did not believe these cuplike formations represented the floors of old lagoons, but considered them similar to the gigantic banana holes, as they are called, found in the Bermudas. He attributed such depressions to causes now going on and looked upon them as the first process in the erosion of the islands. The decaying vegetation, thickest in the interior of a limestone-island plateau, on settling in any inequality or fissure on the flat top of an island, forms acids. These greatly intensify the solvent action of the rains, which, percolating through the mass, carry off the limestone. A drainage from the edges toward the centre is established, and we get the beginning of the saucer-shaped basins so characteristic of the elevated limestone islands of Fiji. At first there is but a slight depression ; this gradually deepens, till when the sea finally breaks in we have an island like Fulanga, about whose outer flanks corals have established themselves. A further process of erosion would result in wearing away this land until nothing remained of the original island but a few islets rising from a denuded reef as in Wailangilala. And finally when the process is carried still further, nothing is left of the island but a submarine ridge upon which corals have established themselves, like Reid Haven. (See colored plate, Figs. 1.)

Where islands, composed either of volcanic material or limestone, have been eroded to form a submarine *platform*, upon which corals have obtained a footing, Agassiz would explain the existence of the lagoon as follows : — The great rollers piled up by the trade winds break over the outer rim, protected by a more vigorous

FULANGA

WAILANGILALA

REID HAVEN

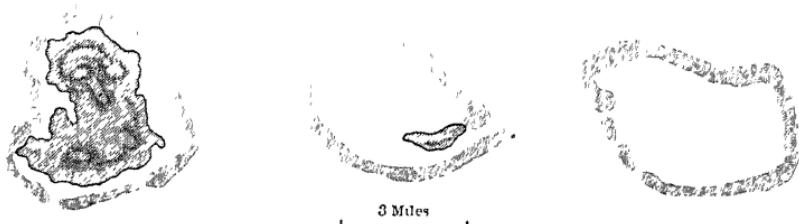


Figs. 1. THE DEVELOPMENT OF AN ATOLL FROM A LIMESTONE ISLAND

MATUKU

KOMO

THIRD STAGE



Figs. 2. THE DEVELOPMENT OF AN ATOLL FROM A VOLCANIC ISLAND

FIGURES SHOWING THE DEVELOPMENT OF AN ATOLL

growth of coral. The water thus poured in forms a hydraulic head that can escape only through the openings in the outer reef flats. It becomes charged with particles of lime or other material, derived mainly from the mechanical disintegration of the corals or substratum forming the surface of the reef, and also in part from the chemical disintegration due to the action of sea water which rots and dissolves the limestones of the reef. Soon there exist all the elements of a modified gigantic pot-hole, from which the churned material is carried out by the currents flowing through the entrances into the lagoon. Where corals have established themselves about an island on the submarine platforms formed from it by denudation and submarine erosion, he would explain, in very much the same way, the passages between the islands and the barrier reefs.

Given a comparatively small volcanic island upon whose eroded platforms corals have established themselves, the first result of the processes described above would be an island with a barrier reef like Matuku. As the denudation and scouring continued, they would cause the disintegration of most of the land, as in Komo. The final effect would be the total disappearance of the land, leaving a lagoon enclosed by a reef. In this last stage the position of the atoll near volcanic islands would often be the only guide to the character of its formation. (See colored plate, Figs. 2.)

There is still another method by which some of the atolls have probably been formed. In the group are two islands, Thombia and Totoya, both volcanic peaks into whose craters the sea has broken through some point in their walls, and formed lagoons. Across the opening

of each island stretches a coral reef. After seeing the coral reefs growing on the denuded rims of these islands, Agassiz was inclined to revert to the old opinion that some of the lagoons of atolls represent the remains of extinct craters. He found nothing unreasonable in the suggestion that many of the small, fairly round atolls, and others rising from great depths and isolated, are the denuded rims of such craters as Thombia, or, if larger, Totoya, upon which corals have obtained a footing.

The existence of some deep lagoons has been cited, by the supporters of the theory of subsidence, as a proof of its truth. Agassiz pointed out that if the theory were true, all large lagoons should be deep. Lagoons of considerably greater depth than that at which corals can thrive he believes may be explained as the remains of old craters into which the sea has broken during the washing away of their walls. In support of this theory he cites the fact that Haleakala in the Hawaiian Islands, Aso San in Japan, and several volcanoes in Java, have craters of a diameter fully equal to a number of the Fiji atolls.

Great bluffs are a characteristic feature of the limestone islands of Fiji. Some of these rise to a height of a thousand feet, and attest the elevation that has taken place in that region. The faces of these bluffs are evidently coralliferous. Agassiz found it was almost impossible to collect corals from the exposed surfaces of these cliffs with the appliances at hand, as the limestones had become so hard that a hammer produced no impression on them, and the corals were so well embedded that they could not be cut out.

From such examination as he was able to make, he

thought these bluffs were late Tertiary, a conclusion confirmed by Dr. W. H. Dall's examination of the fossil mollusks that the former collected from them. Agassiz admitted the difficulty of determining the method of formation of these elevated coralliferous limestones of *a former geological period*. He was, however, inclined to believe them to have been built up by a variety of causes, in part by the growth of a reef seawards on a platform formed by pieces of coral that have broken off and rolled down the outer slope of the reef, in part, perhaps, by subsidence, and in part by accretion from the carcasses of the invertebrates living upon their surface.

To examine these cliffs properly one must be lowered over their edge with a rope, or climb their faces by means of the long hanging roots of banyan trees. So Agassiz concluded that the examination had best be made by a younger man who would devote considerable time to it. In pursuance of the advice of Professor T. W. E. David, of the University of Sydney, Mr. E. C. Andrews was selected for this investigation. Mr. Andrews chartered a small cutter, and spent some time among the islands. From his examination it would appear that these "raised reefs" have seldom more than a comparatively moderate thickness, forming a capping that lies outside and over a bedded cream-colored limestone, quite distinct from the so-called reef rock. In some cases Mr. Andrews was able to trace the underlying volcanic formation whose upheaval caused the elevation of the islands. The examination by R. L. Sherlock and E. W. Skeats of the material blasted from the face of the cliff would seem to confirm Agassiz's opinion of the age of these elevated "reefs."

Any one who has followed Agassiz's theory of the

formation of the atolls and reefs of Fiji will readily understand that whatever the age or formation of these elevated limestones, he considered the method of their origin was quite a separate question from that of modern atolls. For these older limestones have formed the material out of which the atolls have been eroded and denuded, and on whose submarine platforms modern corals have found a footing, just as a cathedral, built over the remains of an ancient temple, would have an entirely different history and structure from the ruin on which it rested.

At whatever time the Fijian upheaval took place, Agassiz thought it was possibly coincident with the elevation of Northern Queensland, and that the area of elevation included New Guinea, and the islands east of it as far south as New Caledonia, and as far east as the most distant of the Paumotus, and extended northward to include the Gilbert, Ellice, Marshall, and Caroline Islands. Since this epoch of elevation the islands within this area have been, like Northern Australia, subject to extensive denudation and erosion.

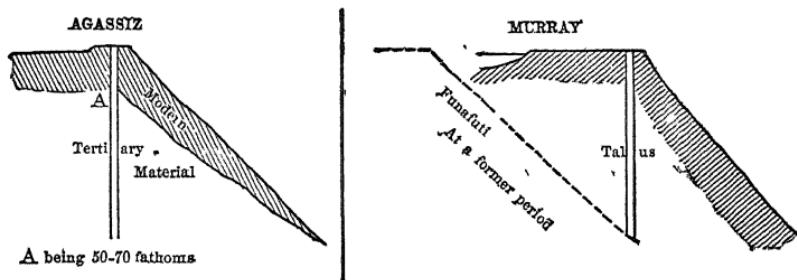
While Agassiz was preparing for his expedition to Fiji, Professor David was continuing the boring operations on the atoll of Funafuti in the Ellice group, originally undertaken by Professor Sollas, under the auspices of the Royal Society. The day before leaving Cambridge, Agassiz received word that Professor David had succeeded in boring to a depth of nearly six hundred feet and that he was still boring in coral. This seemed to settle the matter, but subsequent letters from Professor David showed that the question was not so simple. Agassiz's investigations in the Fijis convinced him that the boring at Funafuti had settled nothing, "*and that*

we are still as far as ever from having a general theory of the formation of coral reefs."

The Funafuti boring was continued the following year to a depth of 1114 feet, when the work was stopped, as the party had exhausted their supply of diamonds. Murray, from his examination of the bore, believes that the drill "passed through a portion of the talus produced by the fragments torn from the growing face of the reef, and on which it had proceeded seawards."

Agassiz, on the other hand, in a letter to Murray in 1907, says of the Funafuti bore: "All I have seen inclines me to think that the core has in part passed through Tertiary limestones, and in part a talus of modern material."

FUNAFUTI¹



In another letter to Murray, written after the publication of the Funafuti Report, he says: —

"I have been looking over again the Funafuti book. I do not see that the examination of the corals found has been a comparative one and a direct one with recent corals, and I defy any one to make such a comparison

¹ There is, in the coral room at the Museum in Cambridge, a beautiful model of Funafuti, made by Mr. G. C. Curtis, from data supplied by the Royal Society Report, and Agassiz's notes.

with anything after the great alteration that has taken place in depth by calcite. The mere statement that the corals are identical goes for nothing. If, as I think, the underlying limestone beds of the modern reef are of Tertiary age, as in Fiji and Christmas Island, the difficulty of separating the modern corals and the Tertiary ones is very great and difficult even where these rocks are accessible. I don't think the line of demarcation can be determined by a core where it is drawn between formations with fossils so closely allied to the recent types. The boring should be done in a region where volcanic beds are underlying the coral reefs."

CHAPTER XVI

1898-1900

THE TROPICAL PACIFIC

THE following letter tells something of Agassiz's activities at Newport the summer after his return from the Fijis, when, hoping to devote more time to his research, he resigned the direction of the Museum :—

TO ERNST EHLERS

NEWPORT, Sept. 15, 1898.

I think I can see your hand in the very flattering notice that I have been elected a foreign member of the Göttingen Academy. While I have given up the administration of the Museum, I have naturally retained the care of the publications connected with the expeditions of the Blake, Albatross, and other expeditions which I may have undertaken, or am likely to make hereafter. I already find considerable relief from executive work, and before I go off this winter I hope to be entirely free. Woodworth, who is to be Assistant in charge, will not take hold until beginning of next year, as he goes to Samoa to finish collecting "Bololo" for his paper. When we saw them in Fiji you naturally came to my mind, and I could imagine how greatly you would have enjoyed the sight of the "vermicelli soup." One of my assistants, Dr. Mayer, and I are collecting material for a Revision of the Acalephs of the East Coast, and we have some fine material which will make a new thing

of my old Catalogue published in '65, and will, I hope, do something to clear up the confusion now existing in the classification of the groups. In the mean time I am at work on the Echini of the Albatross, and Westergren is making some beautiful plates for me. My Report on the Fiji coral reefs is done and only awaiting the completion of the illustrations to go to the printers. I think that Darwin's theory is now disposed of, still I shall not make a general résumé until I have seen the Paumotus, Marshall, Gilbert, and coral reefs of the Indian Ocean. I am now making preparations to go to the Paumotus next August, and see for myself what the reefs there look like. So you see I have laid out for myself quite a little block of work, and I only wish I had made up my mind to give up the Museum ten years ago, as I ought to have done, and have had ten years of younger blood for the coral reefs.

In the winter of 1898-99, Agassiz went to South Africa to see the great gold and diamond mines of the Rand and Kimberley. It was the year before the Boer War, and he was much impressed by the rumblings of preparation which were audible to all except the deaf in office at London. Letters from his English friends opened all doors to him, and his prestige as the president of a great American mine made him a welcome guest of the superintendents and officials of the mining firms of England. When not busy underground or inspecting surface plants, he appears to have been fairly overwhelmed with lunches and dinners.

There were at that time many American mining engineers in South Africa, mostly Californians, some of whom he had known in California in earlier days. At

Kimberley he was most interested in the ingenious skip and bin for rapid hoisting, devised by Mr. Williams, in charge of the great diamond mine there. This process was afterwards successfully applied in several of the copper mines in northern Michigan ; and Agassiz's letter files show that suggestions of his own have since been used with success in the African mines.

Owing to the community of ownership of most of the mines, nothing is projected or carried out without being discussed fully by all the managers; a custom resulting in a unity of action which Agassiz found a great contrast to the constant haggling among the superintendents of some of the small Lake Superior mines. At one of these meetings he was amused to find that the managers were discussing the possibility of mining and hoisting from a greater depth than three thousand feet vertical. At last, when he was asked for his opinion on the subject, he told them, much to their amazement, that at Calumet they had already reached a depth of five thousand feet vertical !

In walking about underground Agassiz unluckily wrenched his knee and brought on a trouble which, from time to time, greatly bothered him for the rest of his life. It is believed that he thought these attacks were gout. They were, however, due to his defective circulation, which showed itself in this weak spot whenever he got out of condition, and set up a dangerous and painful swelling that greatly alarmed his family.

Ever since his return from the Fijis, Agassiz had been planning for an extended voyage through the islands of the South Seas, to include practically all the coral reef regions of the Pacific which he had not yet visited. On his return from South Africa he found that the

Hon. G. M. Bowers, United States Fish Commissioner, had definitely arranged to place the Albatross at his disposal for this expedition. Agassiz was to have the ship under the same conditions as in 1891 : he was to pay for the coal, for fitting her out, and certain of the running expenses. Preparations, already under way, were at once completed for sending coal to various points along the route ; to the Marquesas by the sailing packets that then plied between San Francisco and Tahiti ; and by a special steamer from Australia to Tahiti, to some point in the Paumotus, to Suva, and to Jaliut in the Marshall Islands.

Agassiz again took with him the same assistants he had on his two previous expeditions, besides whom Dr. C. H. Townsend, Mr. A. B. Alexander, and Dr. H. F. Moore were detailed from the Fish Commission.

The Albatross, under Commander J. F. Moser, U.S.N., Lieutenant Hugh Rodman, executive officer, was waiting in San Francisco. Agassiz boarded her there late in August, 1899, for what was to be the longest of his expeditions. A full description of this exploration would require a volume ; a glance at Chart 2 will show the track of the Albatross through the following groups of islands :—Marquesas, Paumotus, Society, Cook, Tonga, Fiji, Ellice, Gilbert, Marshall, and Caroline. On leaving the Carolines, the Albatross touched at Guam and then proceeded north to Yokohama, where she arrived on March 4, 1900 ; here Agassiz left the ship.

The Albatross, unfortunately, proved to be a very different boat from what she was in 1891. Her equipment had been allowed to run down, and her boilers were in such bad condition that she barely crawled against a head wind. So in order to keep the time of the voyage

within reasonable limits, Agassiz was forced to devote himself almost entirely to its main object, the examination of coral islands, greatly to curtail the pelagic towing, and to abandon most of the dredging.

Nearly all naturalists who have worked with government vessels have suffered from red tape and prejudice, an annoyance so well described by Huxley in the few published fragments of his journal of the voyage of the Rattlesnake. Agassiz seems on this expedition to have chafed more from such vexations than on any other occasion.

"I continue to be more and more disgusted," he says, "at the navy red tape; it is so idiotic on a trip like this to attempt to put on man-of-war style. The natural result is that by the time an order gets carried out it has either lost its value, or might as well not have been given! The other day the chief officer was coming back in a sail boat, and it took fully ten minutes before the officer of the deck, who was below, got it into his head that anybody was waiting for him to give the quartermaster the order to heave a line and keep the boat from drifting to sea again. Yet there was the Captain, the crew, and the officers all looking on and seeing the boat fall off. I could not stand it and chucked him a line, but it seems it was a gross piece of violation of etiquette. I am sure that in a pinch a man would drown before the right person got the order to save him! When I am off in a boat with the younger officers, I always assume that they know nothing about a boat, and they don't, and we get on famously."

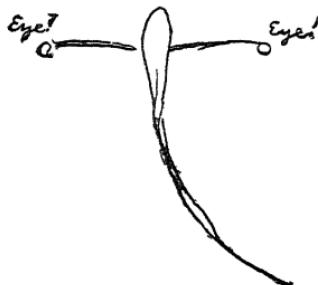
On board the Albatross, August 30, 1899: "One week to-night since we left Sausalito. We are just about

one-third of the way to the Marquesas, just inside the tropics, on the way for a small island the position of which is quite doubtful on the charts, and in fact we shall probably find that it does not exist at all. The first two days out of San Francisco we did not attempt any work. We were getting ready, and besides we were in ground which had been sounded and which was near enough San Francisco to be worked from there later very conveniently. On the third day we put in our first sounding in a little over 1900 fathoms and lost our thermometer and collecting cup. . . . But what was still worse we smashed our sounding reel from the great pressure that it is subject to in winding the wire; it collapsed entirely when we had wound up about 1700 fathoms; on examining it we found the casting was very defective, of poor quality of steel. . . . But what was our dismay on examining the spare cast steel reel to find it no better quality than the first, and sure enough the next day on making a sounding in 2350 fathoms that went all to pieces, and leaves us with only two old-fashioned reels on which we wound the sounding wire from the broken reels and have fortunately had no mishap, and I hope we shall not have any more breakages on that score, for if we do we might as well have chartered a small boat and gone to work independently of the Albatross, as in the islands she will be no better than any boat of mine.

The weather has been fine so far; neither Max nor I have been seasick, though since we struck the trades the sea has run high, but we are going with it. It is, however, too rough to trawl at such deep water as we get at twenty-five hundred fathoms, so that we only tow down to five to six hundred fathoms and sound, and

that gives us quite a lot to do. We have found at one hundred fathoms pelagic — a very queer fish with eyes at the end of broom handles !

I had never seen anything like it. [Dr.] Chun in the Valdivia got it also, and he says it's characteristic of *very deep water* ! and that they get it in their tow nets by sending them way down. The only haul we have made thus far in 2368



fathoms we came upon bottom made up upon manganese nodules, and brought up a lot of sharks' teeth and whales' ear-bones, hauls the like of which the Challenger made at two or three localities in South Pacific and which Murray called my attention to especially ! We got half a ton of these nodules, and from the character of the bottom sample I fancy the whole bed of this part of the Pacific is like that where we trawled. We shall see, I hope soon, at least that is my idea of the nature of the sea bottom in the open Pacific way off from land and in the region of prevailing winds where there are but few pelagic animals to drop upon the bottom. I fancy it must be quite different in the region of calms and I hope to settle this in a few days. . . ."

September 5. "We are now just on the edge of the Great Equatorial current and to-morrow I expect to begin towing and trawling in it. To-day we had in sounding in nearly 2900 fathoms the first sample of Radiolarian ooze bottom I have ever seen, and the Salpæ we got at 150 fathoms in tow net were filled with specimens of Radiolarians identical with those we got at the bottom (dead) and which my friend Haeckel says live on the

bottom! Since I wrote we have been sounding in pretty deep water, nothing less than 2400 fathoms, and one sounding 3088 fathoms. Our bad luck with the sounding apparatus is continuing, and we are not having a single cast such as it should be in all respects—this is bad, and every day gets us further from the true oceanic conditions and little by little we are sure to feel the influence of the plateau on which the Marquesas stand. Still we have left a few days in which to make up—if we lose them we shall have miscarried one very interesting part of our work, all the deep sea oceanic (basin) far from continents which might influence the bottom. We are now just about twelve to fifteen hundred miles from any land! ideal conditions for what I wanted to do, but thanks to the shiftlessness [of the Fish Commission] in not testing their apparatus, it looks as if this my last long expedition was going to be as much of a fizzle as my Australian trip! Not a pleasant prospect, but of course the coral part still remains and the line from Tahiti to Tonga, which is a good line but not an oceanic line like the one San Francisco to Marquesas. . . .”

Albatross—Marquesas, September 15, Taiohae Bay.
“Since I have written we have done quite a lot of work and have made some interesting soundings developing the plateau upon which the Marquesas unite at about eight to nine hundred fathoms. One or two of our deep hauls brought up some fine things, but outside the Great Equatorial current there seems to be but little on the bottom. The deep tow-net hauls have been interesting, and we are gradually bringing up a lot of deep-sea types of fishes and of Crustacea which live within a very moderate depth from the surface. A great deal of the value of our soundings is lost from the fact that there

are no temperatures connected with them, for thus far only one of the deep-sea thermometers on board has been of any use. My only salvation is to drop all that work and make up in work and soundings in atoll groups where, of course, I have the whip handle.

It is very pleasant to be quiet again after such a long trip without seeing a sail or an island. Since my passage from Europe to United States when I was a small boy, I have never taken such a long dose at one time — $22\frac{3}{4}$ days since leaving San Francisco. As soon as we approached the anchorage the Captain of the Port came up to call and place himself at our disposal. He is the chief of the local police also. Then came the Vice-Administrator who is in charge here, his chief having been called to Papeete. They had not yet got official notice of our being expected, but I read him the letter of the French Minister of Foreign Affairs, and that quite settled it. The Administrator quite remembered George's [his son] being here ! It seems he spent a month in the islands and went about a good deal. To-morrow we begin to coal.

To-day everybody is on shore collecting and paying calls and getting information. The native house is very different from anything we have seen at Fiji, built upon a paved platform of huge stones. The natives are fine-looking, remind me more of the Hawaiians than of the Polynesians. But they are beautifully tattooed — unfortunately the tattooing being blue will not photograph. We went to-day to see the old Queen, the wife of a celebrated chief, Toana (who conquered all the Marquesas) ; she must be eighty years old. She is nearly blind, and in charge of a native woman who looks after her. She still has a splendid crop of hair and good teeth ! It

is said that not liking her first husband she ate him and married the great chief. Would it not be a good recipe for Newport Divorcées? It would lessen the later scandal so greatly and simplify matters. Of course the husband might be allowed the same privilege! The hands of the old Queen are most beautifully tattooed, and they say she had the most beautifully cut legs in the way of tattoo in existence in her youth, and the Captain Commanding has been trying hard to make her show her feet and ankles; but she would not understand, though we could see her toes were well carved. The natives here are going fast, dying off mainly by consumption; the adjacent valley,¹ which held once three thousand warriors, has now fourteen inhabitants. It seems too bad. Christianity is fatal to the South Sea Islanders — they cannot stand its restraints, and they die like sheep."

Rangiroa, September 22. "Here I am in my first Paumotus atoll. Before we left Taiohae, the evening before we sailed, the Acting Governor of the Marquesas gave us quite a dinner which I thought would never end; courses after courses followed one another served by Marquesan servants who really acquitted themselves well of their task. He wound up the performances by giving us a most interesting native dance performed by Marquesans of an adjoining valley. The whole took place on a flat lawn outside the Governor's house, illuminated by kerosene lanterns and huge torches of bagoing soaked in kerosene and kept full of kerosene, which lighted up the whole space around the dancers. All Taiohae was there in their best clothes, men, women, and children, and while we were at dinner Woodworth entertained the crowd by giving them selections from

¹ The "Typee" of Melville.

the phonograph, and you should have seen the astonishment of the crowd — it was comical to see their amazement.

The following morning, while we were waiting for beef and provisions to come on board before weighing anchor, the whole lot of dancers came on board to see the ship. We showed them round the ship, cabin and ward room. They were most happy, — the mirrors, electric lights and fans and the machinery and propeller, which they had learned to know from looking at the steam launch when she was going to and from the shore. They wound up by giving us a dance and a song, such as they had given us the day before. The song is quite melancholy, very different from the usual Pacific melodies I have heard before, and always ends rather abruptly, much like the last sounding note of an organ ; then we weighed anchor and off they set for shore, giving us a hurrah in reply to our steam whistles.

Two days ago we struck the islands of Manihi and Ahe. As it did not look very profitable to tackle them, we made for this place, Rangiroa, one of the largest, if not the largest atoll of the group, forty-five miles by sixteen ! We lay off the entrance called Avatoru Pass for an hour or so early day before yesterday, where the chief and two men came out in a small boat and told us we were all right, and in we steamed with their sanction through a narrow pass, out of which the current was rushing at the rate of four to five knots an hour, and got safely to anchor a little way inside of a most uninteresting village consisting principally of broken-down European houses inhabited by natives, who since they have become Christians live like very low-down Christians. The men are a fine lot, tall, intelligent, living on

what they make by selling copra of which at one time they exported a thousand tons a year, quite a profit for the couple of hundred inhabitants of the place, but of late the palm trees have not done so well and the natives have had a hard time. Fortunately there are no end of fish here, and they get plenty to eat.

The French flag was floating over "the Palace" of the Gendarmerie, occupied as we found by a single brigadier who has lived here five years and seems perfectly satisfied with his lot and says so! Yet he appears like quite an intelligent person; he is the only white man of the place, and has no one to spend his time with. As usual he has a native wife, and that's a bad chain for a man to have round his neck here. If there are children, it means he must end his days here in the South Pacific.

Yesterday and to-day I have been spending my time examining this atoll, so different from any I had ever seen, but still a fine specimen of the kind which had always been thrown at me; and though I have not yet got through with this one, yet it looks as if I now would have the chance to throw this kind of atoll at the other side. I am beginning to see daylight, and hope to get a sketch outline of the atoll to-morrow, which will make everything very simple, to *me* at least. We have been taking no end of photographs at this place, for being my first shot I am bound to illustrate it fully. You will find on the chart of the Paumotus a sketch of this atoll which looks like a pear and is about sixteen fathoms deep, full of rocks at the handle end. With the exception of a few scrub trees there are only bushes and palm trees and no water except what soaks through the soil—that is very little. If the rest of the group is as plain sailing a thing as this atoll, it will not be a

long job to finish up, so that when there are two atolls close together I can send a party to photograph and take the adjoining atoll.

The tail end of this [part of the] trip is making up



for many disappointments on the way, and all told when I look back I ought to be satisfied with what I've accomplished."

Off Rangiroa, September 24. "Yesterday we took a trip in the launch from Avatoru Pass straight across the lagoon to the point B., about thirteen miles. This same line the Executive Officer sounded out for me, so that as to-day we are running a line of soundings out to sea off the Avatoru Pass and are going to do the same thing off the south side, it will give a magnificent section across an atoll, and the rough plotting I have made of the figures brings out an outline—as it should—much like the elevated islands of which I have photographs in Fiji. Yesterday when we started we found, as usual, that the Herreshoff launch was not in shape, and we had to tinker for almost an hour before we could start; and I must say that during the whole trip the Captain and I were somewhat nervous as to how long she would run, but we managed to get through all right.

We towed a dingey behind and took a native pilot with us, the same who piloted us in, and who landed us on the other side in the neatest little boat harbor imaginable. On our way we passed an interesting little island composed of elevated limestone (as it should be if my ideas are correct), and when about two miles off, the bare reef about twelve to fourteen feet high, which connects the island and islets, began to loom up and was soon in full view.

As soon as we landed we began to take photographs. I rushed across the islet to examine the limestone ridge which flanks the islets on the sea face, and which Dana saw from *shipboard* and described as elevated recent reef! I was tickled to death when I got there to find myself on familiar ground. I could imagine myself at one of the elevated Fiji atolls like Ngele Levu, where the land is, however, seventy-five feet high and only fourteen in this place; but it is the same pitted, honey-combed, eroded rock with which I had become familiar in Fiji, and full of the same magnificent coral rock fossils which it would take an age to collect by blasting out, but I managed to chip off a few characteristic fragments. I think I have the key of the Paumotu coral reef problem, and it's only an expansion of what I have seen in Fiji; only this group is comparatively plain sailing and clear work, for Dana did not examine his islands very closely; as, for instance, the greatest detail he gives of an island of the Paumotu group is from what he saw sailing by! As for Darwin, he only sailed through and never stopped at all, so that I am quite sure that unless something new and unforeseen turns up, I can chuck this group of atolls at the heads of the Darwin-Dana party and ask them for the next!"

Off Tahiti, September 27. "After leaving Rangiroa we steamed west round the two adjacent atolls; these appeared to show nothing special or different from the one we examined and fall into the line well. . . . After leaving Matahiva we ran a line of soundings to Aurora Island, which is a fine specimen of an elevated island such as we had in Fiji, only finer perhaps. . . . I got the whaleboat and the dory, and in less than an hour we were all ashore collecting and taking photographs. The surf was no worse than it is on ordinary days on Collins Beach,¹ and you would have thought we were trying to land in a hurricane! All we got were wet feet, and we got off perfectly well with all our collections and photographs dry as chips. What we saw was just as at Fiji, and now I feel that my views of the Paumotus are settled. It's merely a question of reconnoitering a dozen or more islands, and I hope we may get through this in a month after we coal instead of six weeks or so, as I had laid out. From here, Aurora Island, we shall run a line of soundings to Tahiti where will end the first part of our trip, and on whole very successful but could have been better."

After coaling at Papeete, the Albatross again made for the Paumotus, calling on the way at the little islands of Tetiaroa, about thirty miles to the northeast of Papeete, which Agassiz was delighted to find composed of limestone, as this fitted them nicely into his scheme of coral reefs.

Fakarava, October 11. "We have been most successful thus far. After leaving Makatea we went to Niau, which was another island (elevated) according to

¹ Now Bateman's Beach, Newport.

my ideas. This island has a sink as lagoon not more than twelve feet deep with mullet and a few sea-shells, but no corals, and is just such a lagoon as I wanted to prove how the Paumotu Lagoons have been made; and at a little island (to the northeast) called Tikei, I found a still smaller sink — just what might be expected of so small a place. We stopped at the entrance of Apataki, quite a large lagoon, just like the other lagoons we have seen. In fact it now looks to me as if I had a sample of all the kinds of atolls to be got in this archipelago. For the past three days, since we left Apataki it has been blowing very hard, so that our passages have been very uncomfortable, just like the trade winds in the Caribbean — in fact a little worse. But this kind of weather (as usual) is not expected and the natives don't know what to make of it. But it's no consolation to us, for with such a wind there is no exploring to be made by water in the lagoon, and we are helpless until the weather changes and the sea goes down. This lagoon is fully twenty miles long and ten wide, not so large as Rangiroa, nor so populous.”

While stormbound he writes Mrs. Agassiz:—

“This is one of the islands where Stevenson exiled himself for a few months. The more I see and read of what Stevenson did in the Pacific, the more inclined I am to look upon him as a _____. Certainly all he writes may be good English, but it has neither common sense nor accurate observation; perhaps he did not fancy that any one would walk in his tracks so soon. What there is here to attract one I cannot see, unless it be a cure for nervous prostration — it's sure to kill that here! When it comes to seeing such noble qualities in

the natives of a place like this, I should say, Bosh ! That kind of talk always reminds me of commentaries on Latin and Greek classics, written in the glare of electric lights and other modern accompaniments."

On board the Albatross, off Tahanea, October 16, 1899. "The bad weather did not last very long at Fakarava and we were able to put in two excellent days in and on the lagoon. I had a fine chance to look at the greater part of the island under the lee of which we were anchored, both on the lagoon and on the sea face. The sea face was wonderfully rich in invertebrates, so we made a fine collection of shore things, some of them very interesting, in addition to studying the conditions of the shore for the coral reef problem.

To-day when off Tahanea we had a most interesting time. This lagoon presents features quite different from other lagoons. I never have read of any such structures as I have seen ; we made no end of photographs, backing and filling to get good views so that Mayer and Woodworth were kept going at a canter. We must have so far at least two hundred views from which to select, and my notes are being filled out fast. If we could have had only a good survey of these islands, how much simpler it would have been to explain matters."

Makemo, October 20. "We arrived here yesterday noon, and are here awaiting the Southern Cross with our coal. She was to be here yesterday or to-day, but thus far no signs of her. Since leaving Fakarava we have had most interesting visits to the atolls on the northeast side of Paumotu : Takume, and Raroia, which are slightly different from the others. The weather has continued superb until last night when it has set in

regular hard trade and will, I presume, continue so now for three or four days, when there will be a chance to slip out again after coaling and do some work. Day before yesterday we steamed all round Takume (or Wolkonsky, as map has it); it was as smooth as glass, and we had an excellent opportunity to see the whole place, for though the lagoon is sixteen miles long it has only a breadth of two to two and a half anywhere and very sharp points. This gave us a lot of good photographs showing the two sides at once. . . . We have made quite a number of soundings between the islands, which go to show that those atolls are not so immensely steep but rise from a great plateau. I am gradually knocking out a lot of superstitions about atolls, and it is really absurd that Darwin and Dana should have written such a lot of nonsense, all evolved from their own brains or reading of what others have said and done. . . .

I am gradually getting the formation of these lagoons into my head, and am not at all surprised that with the limited experience of Dana he should have seen things all twisted round as he describes them."

After exploring the Paumotus, the Albatross again touched at Papeete before visiting the other Society Islands.

Anchorage, Hurepiti Bay, Tahaa, Society Islands, November 16. "You can't imagine what a beautiful little bay we are at anchor in — a deep bight with high hills on each side looking out through the Barrier Reef. The sea has all day been as smooth as a mirror and now there is not the least breath. The moon has risen and the scene is perfect. . . .

Murea, the nearest of the Society Islands to Pa-peete, is the most picturesque of all. Unfortunately, what with our breakdown and rain squalls, we could get no photos of it. . . . Huaheine, Raiatea, and Tahaa are beautiful places and their barrier reefs are superb, taking on a development compared to which the Fiji reefs are as nothing. The islands are as a whole (except the two large Fiji ones) much larger, yet not so large as to lose the unity—and that makes them so interesting. They are thickly populated—the shore lines are edged with houses all on piles and quite different from any style of house we have seen in the islands thus far. Bora Bora is a most striking island. The centre of the lagoon of the island is occupied by a great twin peak rising fully three thousand feet above the sea level and the barrier reef is edged with little islets covered with cocoanut trees in great contrast to the bare volcanic sides of the central mass."

Touching at the Cook group, the ship on November 25 made an isolated island about three hundred miles northeast of Tonga, called Niue or Savage Island, because in old days the natives murdered any one who dared land on its shores. Although the inhabitants are still independent, having a so-called king elected by the chiefs of the various villages, the spirit of "civilization" has invaded the island. For when a landing party from the Albatross reached the shore the natives rushed toward them shouting, "Give tabac," and thrusting their hands into the visitors' pockets demanded, "Mun! Mun!!"

They were all supposed to be Christians, over whom the missionary held despotic sway. Agassiz had an amusing adventure with him. It was Sunday on the island,

so no one was allowed to trade with the ship, which was sadly in need of fresh provisions. Now the *Albatross*, coming from the east, had not yet dropped a day, and it was Saturday on board. Going to the missionary, Agassiz told him that unless he allowed the natives to sell to the ship, he would explain to them that Sunday was such an artificial thing that for two white men coming from different quarters of the earth it existed on different days. After a little reflection the Rev. Mr. L—— removed the tabu.

Agassiz had but little sympathy for what he saw of missionary life, of which he writes:—

“ What I never like in the South Pacific is to see the swell houses (comparatively speaking) of the missionaries. They always in all the islands have the very best of everything, and certainly don’t show the natives any example of plain living, for they are most comfortable and have no end of servants. . . . I have been reading M——n, and such twaddle passes my comprehension. It is nothing but an apology to join the European band of robbers in despoiling the barbarians, as we are pleased to call them, and compelling them to buy our goods and wares in addition to stealing their land — all in the name of spreading civilization! Just as the missionary swindles in the South Seas, who trades with natives, makes a lot of rules for them adapted to our uses, and compels them to do as we think right, all in the name of Christianity! — and if they resist the missionary claims the protection of a *Man-of-War* of his Country! What fun it would be for a man of energy and pluck to come among the islanders and help them to resist such aggressions. . . . ”

As the Albatross approached the deep hole, about 75 miles from Tongatabu, preparations were made with care and considerable anxiety for what was by far the deepest dredging ever accomplished ; and the trawl was finally lowered in 4173 fathoms. When at last the net was successfully hauled on board there was naturally much curiosity to see what it contained. The first thing to fall out was a small rubber frog. Agassiz looked at it for a second in amazement, and then, glancing up with a smile, exclaimed, "That d—— Rodman !" Much to his surprise, as he had expected nothing but mud, the bag contained a number of large fragments of a silicious sponge, and the bottom was found to consist of light-brown volcanic mud mixed with radiolarians.

When the Albatross was sighted approaching the harbor of Nukualofa on Tongatabu, the king of the islands called for his army of thirty-five men, who had been peacefully digging yams, forced them into the most uncomfortable European uniforms, and kept them occupied firing a brass cannon by way of salute.

"We went to see his Majesty King George of Tonga, with the British Consul. It was quite an *opéra bouffe* performance and reminded me of old times at Honolulu with old King Kalakaua. The King was got up in his uniform with stars and orders, and sat in a high chair with a crown on the back of it. His cabinet surrounded him and one of the missionaries acted as interpreter. The Captain and a few officers were in their full toggings, and Woodworth and I in white clothes. The palace is a cheap tawdry American wooden house with gaudy carpets. We were received at the gate by the King ! band playing 'Hail Columbia,' and the King's army of

thirty-five men who presented arms as we passed in the Palace yard. We sat and talked back and forth for an hour or so and then took our leave, asking the King if he wanted to come on board and see the equipment of the Albatross."

After a reconnaissance of the Tonga group the Albatross was headed for the southeastern edge of the Fijis.

"We left Vavau day before yesterday afternoon with a spanking trade and all sails set, going altogether too fast, so we had to slow up and lay to for a part of the night so as to make Yangasá early this A.M., and sure enough the first island I saw looking out of my port was Yangasá, which is most peculiar in outline and the like of which there is not in the southern part of Fiji. On going to the Pilot House I told the Captain what it was, and he with great glee told me I was quite mistaken and that it was another island to the south. I didn't stop to argue, and after half an hour's monkeying with the chart to make it suit his views I noticed he changed his course and said nothing! He then confronted me with the sailing directions to show he was right, and I confronted him with a photograph, which settled the matter."

Agassiz stopped at Kambara, which he had visited in 1897, in order once more to examine its cup-like summit, so characteristic of the limestone islands of Fiji.

"It was very funny to see how pleased the natives were to see us again. The old chief and his wife greeted us

in a most stately manner, and after our return from the hill we called to bid him good-bye, and the Captain and I wandered round to the huts and the houses to see what they had. The officers got a lot of Kava bowls — this is a great place for them and for building canoes, the island being full of very large hard-wood trees. One of the women we saw was really quite a type. She must have been, from her frowsy look, the pattern after which the native woman of the Fiji Group was depicted ! She had red hair like a sheep's-wool mat standing out at right angles to her head, an arm big enough to kill an ox if she struck him, and a sort of wild look in her face. The chief's wife came on board with us, and kept watch of the whole crowd, and took the whole party on shore again after they had given us one of their songs on deck. It is really refreshing to get to a village again where nobody can speak English, and where there are no missionaries or traders and the natives run themselves. A cleaner and more attractive village we had not seen.”

Passing his old anchorage, the crater harbor of Toyota, Agassiz reached Suva on December 11, 1899. “ You have no idea how much at home I feel here,” he writes. “ It’s really like getting halfway to Cambridge when coming back from the mine ! Everybody from the Governor down most attentive and I feel as if I owned the islands. . . .”

The Albatross remained a few days in Suva to coal and provision, and then started for the Ellice Islands. Here Agassiz writes from the island celebrated as the site of the boring of the Royal Society.

ALBATROSS, FUNAFUTI, Dec. 25th, 1899.

“Little did I expect when leaving Fiji two years ago, to be spending Xmas at anchor in this atoll. We left Suva the 19th and steamed among our old island friends, and the following morning were bidding farewell to the last outlying reefs and islands, and Ngele Levu was the end of all Fiji Islands. Ever since leaving Suva the weather has been superb, getting gradually hotter and to-day is the warmest day we have had. The water in the atoll is 89 and the air is about 104 — and as it’s pretty moist atmosphere, it is warm enough even for me.

I found Funafuti just as different from other atolls as possible, and I have been here for three days mousing round and getting the hang of the schoolhouse. I have now got hold of the structure of the place and understand it, and as far as I go it’s all on my side. But I begin to see how useless it is to discuss coral islands between people who have not seen the same thing. I could not make out what David, Sollas, and Gardiner meant until I had seen Funafuti — it’s so different from all other atolls, and unless I had my experience to go upon it would be hopeless for me to give a natural explanation, and I should be groping round and talking in the air. It was very funny going round the shores to find the tracks of the David and Sollas party where they had broken off samples of the reef ledges! two years ago. I go off at six A.M., get back at eleven, and off again at four till night. . . .

The people here are very primitive, wearing grass skirts, and their houses very different from any we have seen, all open except mats which they drop like rattan mats against rain or sun. They raise a floor, upon which they sleep, about two feet. They live on chicken, pigs,

eggs, bananas, and cocoanuts, and go fishing, and their canoes are very primitive. The population seems absolutely in the hands of native missionaries of the London Society, which rule them with a rod of iron, fine them on all possible occasions. Why they stand it I can't see — compel them to wear clothes from which they get skin diseases, consumption, and children all dying! Yesterday was Sunday, and women all came out in mother hubbards and bonnets and hats!! You never saw such guys and they went to church five times! To-day they have again cast off their fine clothes and gone back to a more scanty rig.

It's a pity there can't be a little common sense infused into this religious cant. As it is now, it's sheer cruelty and enforcing of arbitrary rules against health and decency as the people understand it. There are three Catholic priests here who are trying to make converts by bribing them with tobacco, the other sects just now being out of that article. Do the missionaries really imagine in their heart of hearts that the native can draw the line between Episcopilians, Methodists, Wesleyan, Mormons, and Catholics, etc. It's really too disgusting, and we go on spending lives and money to save souls, or rather to make Christians of them. I should like nothing better if I had time to enter into a crusade against such barbarism and show up the mission fraud. Well meant, I have no doubt, but — !”

Upon leaving the Ellice group, Agassiz examined the principal atolls of the Gilberts. Dr. Mayer complains that “going ashore in this group was not an unmixed pleasure, for the natives insisted upon opening our jaws in order to admire the gold fillings in our teeth.” Here

Agassiz obtained what was probably the last complete suit of cocoanut fibre armor on the islands. Always on the watch for anything of this character, he writes, "I have got quite a number of mats, axes, weapons, from the different islands which are getting very valuable,¹ as the advent of civilization spoils their habits for this old-fashioned work, and they forget their own arts in the care of buying cotton cloth and all the cheap stuff which they now buy from the traders in exchange for their copra and fruit."

The Albatross reached Jaluit, the capital of the Marshalls, early in January.

TO MISS E. H. CLARK

JALUIT, Jan. 10, 1900.

We had a fair passage from Taritari, but how slow, 240 miles in two days and only delayed three hours by soundings. This is a fair sample of the speed and how it interferes with all work. We ought to have in that time made a passage and spent the greater part of the day trawling, etc., but we should never get anywhere did I do anything but coral work and the necessary soundings.

I have found all the coal I had ordered here and in excellent condition. . . . The Germans here in charge are most pleasant people; the agent for the Jaluit Company, Mr. Hütter, is an educated man who has been in charge of the Marshall Island business since 1885, at the time when the Company which practically owned the islands passed them over to the German Government. We dined with him and the Commissioner in charge of the German Government interests who has a very pleasant

¹ This collection is now at the Peabody Museum in Cambridge.

wife, an American, who speaks all possible languages. The Doctor of the colony is also an excellent representative, and I could not help contrasting the small number of officials, who run the Marshalls at a profit in true commercial German style, and the pomp of the Fiji with its huge staff eating away all the revenues. . . . But this is terribly isolated — a mail about once in three months and a Man-of-War twice a year — since they have bought the Carolines and Ladrones I fancy they 'll have to do more, as their possessions are now quite well concentrated and extend from New Guinea to Marshall, a pretty well unbroken series of islands. But why they want them I can't imagine — the more of that sort of possessions they have the worse off they will be!

The Albatross spent nearly a month exploring the huge atolls of the group, which are remarkable for the relatively small area of their land rims, when compared with the vastness of the enclosed lagoons. The chiefs still reigned supreme there, and owned all the land, so that the other natives were little better than their slaves. Of the atolls of Menschikov and Rongelab, Agassiz writes: "Neither of these places has many genuine natives left — civilization has crept in too far and galvanized iron has replaced thatched roofs, and clothes, their beautiful mats. At Rongelab we found one of the few native chiefs got up to kill in his grass skirt and bits and necklaces in hair and feather top-knot. Woodworth took his picture and then we bought his whole dress suit for \$1.25 !!"

"The islands are very fertile, but the natives make little of them, and really live very poorly and have

nothing in their huts, which are mere sheds on posts to keep the rain out, but they do make beautiful mats and fans and the finest canoes in the Central Pacific. The poor devils are all round the ship to-day sitting in their shirts in their canoes quietly catching the rain and their death-cold, while if they were bare-skinned they would pass scot free. One man specially was a fine specimen of missionary dress ; he had on his customary mats, and in addition had put on a long mother Hubbard gown in which he looked most comical and might have been exhibited as a bearded woman ! and his photograph sent round to all religious papers as one of the finest examples of the success of missionary work in converting a naked savage to a clothed Christian ! It 's sickening were it not so comical."

Agassiz was always fascinated by the skill with which these natives handled their great outriggered sailing canoes. Unlike the superb men of Tonga and Fiji, the Marshall Islanders are small, thin, and stooping, with sullen, forbidding countenances. They are, nevertheless, the most daring navigators of the South Seas, sailing long distances by the aid of their curious "charts," made of sticks lashed together. A number of these, brought back from the expedition, are now at the Peabody Museum.

After again coaling at Jaluit, the Albatross proceeded westward through the Carolines, touching, among other places, at Kusaie, Ponapi, and the Archipelago of Truk. On leaving Truk the expedition headed northwest, bound for Guam, our new possession. There the Albatross anchored off the old-fashioned stone fort which commands the harbor. At the height of the Spanish

War, not many months before, the U.S.S. *Charleston*, so the story goes, appeared from the unknown world and fired upon this bulwark of defense. The Spanish Governor, mistaking the attack for a salute, sent out a boat to apologize for not returning it, as he was out of powder.

“The [present] Governor is Captain —, of the Navy, who is a half-religious crank and keeps issuing proclamations which I fancy are all illegal, as he undertakes to do a lot of things which Congress has most distinctly forbidden in any part of the United States.”

On their arrival in Japan on March 4, 1900, Agassiz and his party were most hospitably entertained by the late Professor Mitsukuri, of the Imperial University of Tokyo, who worked on some of Agassiz’s collections. After giving an address at the Japanese Geographical Society, and being the guest of honor at a Japanese dinner at the famous Maple Club in Tokyo, Agassiz sailed for San Francisco, where he arrived early in April.

He was now approaching sixty-five, and the pace was telling. “I am beginning to realize,” he writes, “that I am too old to go on such expeditions as this — it’s too hard for me to have such a long pull — a couple of months’ work in the field is all I can carry now, and I ought to have started on these expeditions fully ten years ago when I was younger and stronger and had more go to me than I can possibly expect to have hereafter. It’s too late !”

This chapter would be incomplete without a short summary of the conclusions that Agassiz reached, after the tremendous labor of examining the almost endless groups of atolls and islands through which the Albatross threaded her way. In the Paumotus he was able

to show that the formation of the atolls is due to very much the same causes which have shaped the limestone islands of the Fijis, namely, to elevation and a subsequent eating away of the elevated islands. The fact that the Paumotus are all of nearly the same height he explained by supposing them to have been (before erosion) only slightly and about equally elevated. In most of the atolls of this group the Tertiary limestones have been cut down to the water's edge. The appearance of the old Tertiary ledge and of the modern reef rock is so strikingly different, that it was a comparatively simple matter to distinguish the two, even where only relatively small fragments were found.

Whereas in the Fijis the islands on the atoll rims are the remnants of an elevated island that once covered the entire area of the atoll, in the Paumotus the original islands have been, in most cases, completely cut away, and the land rim has been formed by the refuse of the old ledge, combined with the fragments of the coral that has established itself upon it, which gradually build up small islands on the reef flat; these slowly grow, become fused, and form a more or less connected rim about the lagoon.

The reef shelves of the Paumotus, far wider than those in the Fijis, supply great masses of material from the breaking up of the outer and inner edges of the Tertiary limestone platforms. These, together with the fragments of coral growing upon the flats, are thrown up on the reef flats and form a pudding stone or breccia. This pudding stone or beach rock is found on all the atolls of the group. It forms great bars, generally at right angles to the shore line. The sea and wind usually follow the trend of the shores, and the bars of beach

rock act like buttresses and collect coral shingle, and thus are built up little by little, at first small sand bars, then larger bars or islets, which gradually form islands. In the larger atolls, with lagoons many miles across, the trade wind creates a very considerable sea inside the lagoon, and the process goes on in the lagoon as well as on the sea side of the reef flat. Gradually the islands become covered with vegetation, and when the refuse material is very abundant, the land rim becomes more or less solid, forming a series of islands with passages between them. The formation of these land rims can be traced from an atoll like Fakarava, where the islands, especially on the lee side, are widely scattered along the rim of the reef ; or at Rangiroa, where the islands are rather less scattered, until as the process of filling in of the islands continues, there results such an atoll as Pinaki, with a continuous land rim, and one shallow passage into the lagoon. One step further, and we may imagine this atoll entirely enclosed like Niau (which, however, was never planed down to sea level), when it would be merely a question of time for the sand to blow in and fill the lagoon.

Niau is the only one of the larger atolls of the Pau-motus whose lagoon is entirely cut off from the sea ; in general, all the atolls are now in a condition which allows a vast amount of water to be forced into the lagoons ; this scours them out in the manner described in the preceding chapter. Dana and other writers on coral reefs mention a great number of lagoons as being absolutely shut off from the sea : such descriptions must have been taken from charts, where many atolls are indicated as closed because they have no boat passages. For nothing would be easier than to pass unnoticed, even at a short

distance, the wide or narrow cuts which allow in many cases the freest access of the sea to the interior of their lagoons.

Pinaki (Whitsunday) is perhaps the most interesting atoll of the group historically. It was discovered by Captain Wallis in 1767; it is about one and a half miles in diameter, is nearly circular, and the continuous land rim has but one narrow entrance, too shallow for row-boats even in a smooth sea. The somewhat diagrammatic sketch of this atoll by Beechey has been so frequently reproduced in text books, that it has come to be looked upon as the typical atoll. While it is undoubtedly an interesting phase in the history of atolls, its constant reproduction has given it a celebrity out of all proportion to its importance, and has gone far to disseminate a very erroneous impression of what an atoll is. In reality, Pinaki, instead of being typical, is quite exceptional.

The larger of the Society Islands are volcanic peaks, surrounded by barrier reefs, which owe their existence to precisely the same process of denudation and erosion that has taken place in the very similar volcanic islands of the Fijis—Kandavu, Mbenga, Nairai, etc. There is one point, however, in which the barrier reefs of the Society Islands and Fiji differ. In the Fijis, the barrier reefs are generally merely reef flats upon which the sea breaks, with an occasional rocky island or negro head; only rarely are sand keys found there. On the more extensive reef flats of the Society Islands, on the contrary, the barrier reefs are well indicated by long lines of narrow islets formed from the débris of the reef platform, débris piled up exactly as the land rims of the atolls of the Paumotus. The peculiar aspect of these well-wooded

barrier reefs may be seen, at the Cambridge Museum, in the beautiful model of the Island of Bora Bora, by Mr. G. C. Curtis, who was sent by Agassiz to the island, and passed some time there making notes, measurements, drawings, and soundings.

Tetiaroa and Motu Iti, two atolls of the Society group, are from their position probably volcanic, and represent the final denudation of such an island as Bora Bora. The first stage in this process is well exemplified in Maupiti, consisting of a smaller and less lofty central island, and a proportionally more extensive barrier reef flat.

Like the Fijis, the Tonga group is partly volcanic and partly elevated Tertiary coralliferous limestones, here developed on a scale far beyond those of the Fijis. Agassiz was able, from the examination of the Tonga Islands, to satisfy himself that recent corals had played no part in the formation either of the masses of land or the plateau of the Tonga Ridge, where they are a mere thin living shell, or crust, growing at their characteristic depths, upon either limestone or volcanic platforms, the formation of which has been independent of the growth of recent corals.

The existence of the archipelago of Truk in the Carolines, one of the volcanic formations of the group, he was convinced could be accounted for by the same agencies instrumental in creating similar formations in the Fijis. He concluded that some of the atolls in the Carolines had probably volcanic and others limestone foundations, but in none of them did he find the bases exposed.

Nor in the atolls of the Ellice, Gilbert, or Marshall Islands, was Agassiz able to observe the character of the underlying base which forms the foundations of the land areas of these groups. In this respect these archi-

pelagoes are in striking contrast to the Paumotus, the Society Islands, the Tonga, and the Fiji Islands, where the character of the underlying foundations of the land rims is readily ascertained. But on the other hand, the first groups gave him the means of studying the formation of the land rims in a most satisfactory manner. He was nowhere else able to trace so clearly the results of the various agencies at work in shaping the endless variations produced in the islands and islets of the rims of the different atolls by the incessant handling and rehandling of the material in place, or of the fresh material added from the disintegration of the faces of the rims, or of the corals on the slopes.

In many of these atolls he was also able to observe how the luxuriant growths, on the reef flats, of such corals as *Porites*, are gradually changed into dead reef flats, with a surface cemented by *Nullipores*; they thus become the base upon which a land rim of bars or islands is gradually thrown up.

In concluding, Agassiz mentions his opinion that thus far no observer has given sufficient weight to the action of the trade winds in modifying the islands within their limits; or has noticed that the coral-reef areas are, with few exceptions, situated within the limits of the trades, both north and south of the Equator.

In 1839, Wilkes, wishing to give some future voyager an opportunity of measuring the growth of a coral reef, set up a monument at Point Venus on the island of Tahiti. A bench mark showed the height above a certain point on the adjacent Dolphin bank. Agassiz was naturally anxious to avail himself of this chance to measure the growth of coral in sixty years. After all the misinformation that had been published about coral

reefs, he was not so completely surprised to find that the point selected was not over a bank of growing corals at all, for the bottom was covered with broken fragments of dead coral coated with Nullipores. As he very justly remarks, "a more unfortunate selection could not have been made."

CHAPTER XVII

1900-1902

THE MALDIVES

As usual in his later years, Agassiz spent the summer of 1900 at Newport, busy working over the reports of his previous expeditions.

TO ERNST EHLERS

CASTLE HILL, NEWPORT,
Sept. 1, 1900.

I am hard at work on my Report of my last expedition to Pacific, and hope soon to issue a short preliminary Report on the final results of the trip with charts of the route, and next will come I hope my Report on the Coral Reefs of the Pacific, which should be one of my best things, for the amount of material I have collected for that is colossal both in way of photographs and in the way of ground covered by the Albatross. But I fear it will take about two years of the hardest kind of work, and I find I do not work quite so readily now as I did twenty years ago. The side issues of the expedition will take a good deal of time also, but I hope with the help of the collaborators I have to get out the results in due time, and there is still a good deal left of the Blake and of the 1891 Expedition of Albatross, and before all the Reports are out my own share of laying out the results as a whole must remain in abeyance. The Echini of the 1891 Expedition are now well under way

and this ought to make an interesting Report. I have some thirty Plates of that done and am pushing it fast. Some of the Plates by Westergren are very beautiful, and I really wish I could have got hold of him long ago for my Challenger and Blake Plates. It is a real pleasure to work with such an artist, who knows so much of the subject himself and is perfectly enthusiastic on the subject. I expect next winter to pass a few weeks in London and Paris to look at some Echini, and if I can manage it I shall try and run over and see my German friends.

Agassiz passed the winter of 1900-01 in Europe. Most of his time he spent in Paris, Berlin, Vienna, and Leipzig, examining the collections of the more recent deep-sea expeditions of the *Travailleur*, *Talisman*, *Valdivia*, and *Pola*. While in Paris, he found time to allow Jules Lefebvre to paint his portrait, for which some of his friends had given a fund to the Harvard Corporation. This picture now hangs in the main entrance hall of the Museum. Agassiz is represented standing, clad in the scarlet robes of a doctor of Cambridge, England. The portrait is academic and stiff, and hardly suggests his character; it is, however, not out of harmony with its surroundings, and is perhaps a more fitting memento than a less formal likeness. Shortly after the picture was hung in its place, an old German retainer of the Museum was seen to pause before it a few moments, and exclaim scornfully as he proceeded on his way: "Hum!—the Professor looks as if he had been speaking French!"

TO MRS. LOUIS AGASSIZ

PARIS, March 9, 1901.

Quite a long letter from you to-day and am sorry to see that the summing-up of the winter has been such a long housing for you from cold, etc. My wrist is all right again, but I use it a little carefully, as you will see from my new chirography.

I bought a second Rosa Bonheur to-day, a splendid Royal Tiger—it is really superb. I don't know where I shall put it in Cambridge any more than the Lion. The two will not do in the same room. Each is fine of its kind, and what is good especially is the characteristic landscape. Usually this is anything—in both cases the beasts are in their lair and as they live. Perhaps you know she had lions on her place and used to live at the Jardin des Plantes when she was painting the tiger. I never saw such movement as the beast has—he is superb. Max quite approves of my purchases in way of pictures, and as the boys are to have them they had better be to their taste also.

There are some of the modified impressionist landscape painters here whose things I like very much also, so I indulged in a couple. There was one by Monet I would have bought, but Max could not stand it, though he acknowledged it was the best of its kind he had seen. I dare say Ida would have appreciated it, but Quin feels about them much as I do—he would not give them house room. The only way to have them is about a mile off—then they are superb. They suggest anything and everything you can fancy. It is astonishing what a lot of pictures are sold here to go to America. We seem to be cleaning up the picture market as fast as they are produced.

On his return to America, Agassiz completed his preparations for an expedition to the Maldives, a curious group of composite atolls which lie about four hundred miles to the southwestward of Ceylon. Previous to his visit, there had been two memorable expeditions to these islands. In 1834-36, Commander Moresby made a survey of most of the group, upon which the Admiralty Charts are based. The accuracy of this work is marvelous when it is remembered that it was done in the days of handlines, row-boats and sailing vessels. The other explorer, Dr. J. Stanley Gardiner, had lately returned from a prolonged study of the group, mostly accomplished in a small sailing boat; but the results of this expedition had not yet been published.

Darwin, who never visited the Maldives, considered their peculiar formation due to the disintegration of ordinary atolls. Agassiz had always intended, after finishing his explorations of the atoll and coral regions of the Pacific, to make an expedition to these islands, especially as they were the only great group of atolls he had not visited. For this purpose he chartered the steamer *Amra* of the British India Steam Navigation Company. The vessel was equipped with a Lucas sounding machine, built especially for the voyage, a modification of the type used by the English cable companies, which Agassiz found simpler and easier to handle than the Sigsbee machine he had used on his previous expeditions. She was also furnished with a Bacon winch and a drum large enough to hold eight hundred fathoms of wire dredging rope. This equipment was to be used for deep towing, and such few hauls of the dredge as there might be time to make. As usual, the minutest details of

the trip were carefully thought out and arranged for far in advance.

On his way to Ceylon, where he was to join the Amra, he spent three weeks in Paris, busy seeing his friends, having his portrait by Lefebvre finished, and as usual mulling over all sorts of projects for the future.

TO SIR JOHN MURRAY

PARIS, Oct. 26, 1901.

I am very glad you are likely to pass through Paris while I am here. Let me know beforehand, if you can, so I may be sure to be on hand.

I begin to feel as if I might have taken Gardiner's say on the Maldives and not go there ; still I fancy it's just as well to have a look at them. From his preliminary Report, he must have worked very hard there. If I can make up my mind, I want next winter to explore Lake Nicaragua. I've had it in mind for quite a while. It is said there are sharks and skates and other marine fishes and things ! "Quien sabe ?" anyway, it is probably a remnant of the sea, elevated in¹ ? times, and one might bring up something of interest by dredging, and collecting there. It's quite accessible via Panama, and in winter the climate there is fine, hot but not unhealthy, and I believe there are a number of small steamers available for the depths of the Lake, which is said to be not more than 130 to 150 fathoms.

Agassiz sailed from Genoa on November 26, on the Prinz Heinrich, taking with him as assistants his son Max, Dr. Woodworth, and Dr. H. B. Bigelow.

¹ Left blank in original.

TO HIS SON RODOLPHE

COLOMBO, Dec. 21, 1901.

We are off this P.M.; we got here the 16th — three days late, owing to endless delays from freight accumulated at intermediate ports going to China. We found the Amra quite as far ready as I expected. They had made all the alterations I had asked for — the sounding machine and the dredging winch were set in place, coal on board, most of the provisions, and there only remained a few little changes and additions and supplies to lay in to have her O. K.

The British India people, from whom I charter the Amra, have been most attentive and thoughtful. The Captain (W. Pigott) is one of their best men, commands one of their largest passenger steamers, is a really nice chap, very gentlemanly, and full of interest in the trip. He has been to the Maldives several times, and is a great friend of the Sultan's. The Amra is about as big as the Albatross. We all have excellent cabins, a fine place to work on the upper deck, amply protected by a wooden awning from rain and sun, where we have a huge table to sort our specimens. We expect also to dine on deck in ordinary weather, as saloon below may get a little warm; electric lights, punkas, bath-rooms. The officers are nice young chaps, also engineers, and we take ten additional men as boat's crew and for carrying photographic apparatus, in place of a steam launch! We have no end of drinking stuff, wine, soda, etc. Of course our ice will give out first, but we shall get used to going without, as we have had to do on other expeditions. She is provisioned for three months, and carries coal for two months. So I expect to be able to stay out

of Colombo long enough to do all I want without having to come back for supplies. The Amra is fully as comfortable as the Albatross, and it makes me sick to think I might ten years ago have built such a boat for my work and have had no complications with Government officials. Still I have had my work, if not exactly as I might have had it—owning a boat would not have cost me a bit more in the long run. But it's too late now to begin.

Agassiz had letters from the English government to the officials in Ceylon, who notified the Sultan of the Maldives (an independent protectorate of Ceylon) of the proposed expedition. The Amra made directly for the capital of the group, the small island of Male on the southeast rim of the atoll of that name. Most of the little island, perhaps a mile long and nearly half a mile broad, is covered by an old ruined fort, all that remains of the attempted occupation of the Maldives by the Dutch and Portuguese. On the northwest face of the island is a breakwater enclosing a little harbor which affords shelter for native boats. An open space leads up from the landing to a solid wall of coral limestone that surrounds the Sultan's palace, a rambling structure of the same material, half bungalow and half castle, with overhanging eaves and a corrugated iron roof. The rest of the island is covered with the native village; its neat streets shaded with magnolia, banana, bread-fruit, and other tropical trees, under whose shade the bamboo-framed houses, covered with thatch, rest each in its little courtyard carefully fenced off with cocoanut leaves.

After lunch on the day of their arrival the whole



THE SULTAN ON BOARD THE AMRA

party went ashore to pay a visit to the Sultan. They were shown into the throne room paneled with polished teak, and furnished with a few teak chairs, and a gorgeous gilded armchair. The walls were decorated with a number of phonographs on shelves, and a quantity of cheap clocks ! Presently the Sultan came in, a striking and intelligent figure, dressed in embroidered green satin, with a green brocade turban crowned with a gold aigrette. Agassiz presented his letters and offered some presents that he had brought especially for the occasion. The Sultan asked a few questions, through his Prime Minister and interpreter, in regard to the objects of the expedition. When the audience was closed, and the rest of the party had left, the rigors of court etiquette were relaxed, and the Sultan consented to defeat Agassiz at a game of chess. In the evening the party again went on shore and entertained the court with a display of fireworks and some lantern slides !

The next day the Sultan with his brother came on board in full state in the court barge. She was manned by twenty oarsmen ; on a raised poop in the stern the Sultan and his brother stood under white umbrellas, surrounded by their suite. Attended by two fan-holders, and a man carrying his shield and another his sword, the Sultan inspected the ship, and showed a most intelligent interest in the sounding machine and the apparatus for towing and dredging. At the end of the visit, Agassiz gave him a copy of "Three Cruises of the Blake" and a revolver !

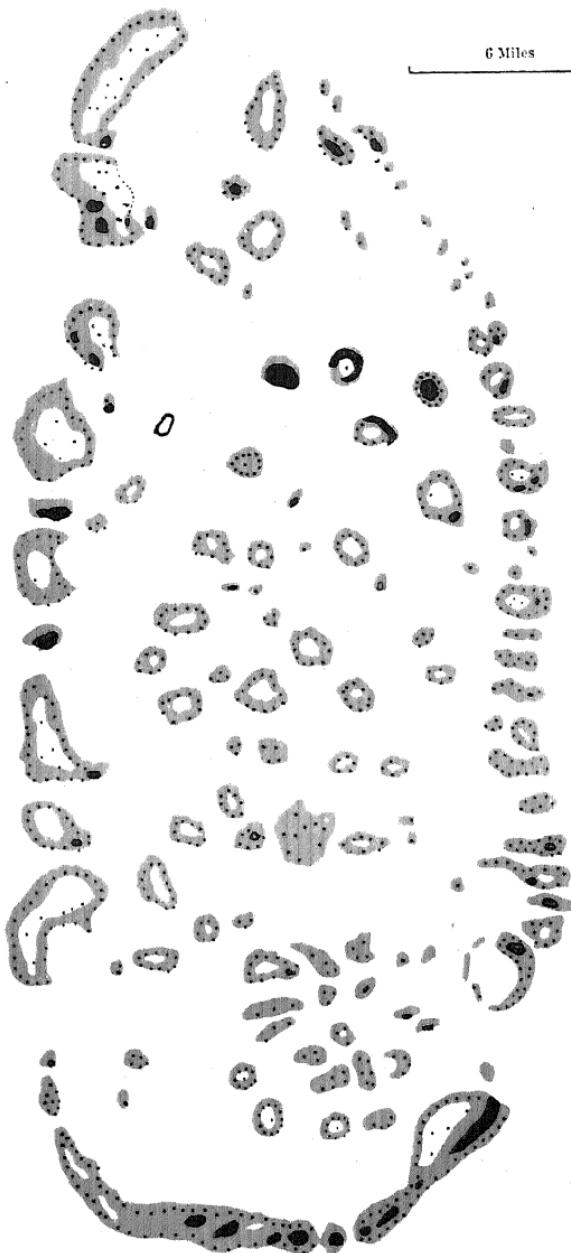
Before the Amra left, the Sultan gave Agassiz a circular letter to all the chiefs of the group, and furnished him with an interpreter, and a representative in the person of one of his ministers. The latter proved a doubt-

ful blessing, developed a taste for alcohol, and caused trouble among the natives because he fancied they were not treating him with sufficient consideration.

A small chart, in the corner of Chart 1, gives an idea of the ship's course through the group.¹ The archipelago consists of a chain of atolls, which is double along its central portion, and extends from Lat. 7 N. to about fifty miles south of the Equator. The group is said to contain 10,000 islands, though this is probably an exaggeration. A glance at the diagram, on the opposite page, of a so-called composite atoll of the region will show that navigation through such lagoons is by no means easy. A good deal of planning was necessary to lay out the voyage to advantage. In order to explore a lagoon, the sun must be in certain positions to detect the shoals from the color of the water. One cannot steam east in the morning or west in the afternoon. To take photographs successfully the eastern face of an atoll must be explored in the morning and the western in the afternoon. Finally the programme must be so arranged as to reach an anchorage before sunset, so selected that the sun will be in a favorable position the next morning to continue observations without loss of time.

The inhabitants of the Maldives are all Mohammedans; it was the season of the Ramadan, but no religious austerities could greatly interfere with such a wonderful event as the arrival of a European steamer: indeed, in some of the islands at which they touched the natives had never seen a white man. Everywhere the explorers were received with friendly curiosity by the men, who,

¹ This chart is of earlier date than the larger scale charts used on the expedition, and the spelling of most of the names is different.



COMPOSITE DIAGRAM SHOWING THE CHARACTERISTIC FEATURES OF
MALDIVE ATOLLS

The blue portions represent reefs and flats anywhere from barely or nearly awash to a few fathoms under water.

mindful of the religious obligations of their womenkind, kept them as much out of sight as possible.

The geological conditions found in the Maldives reminded Agassiz of those existing on the Yucatan Bank, except that in the latter region the shoals are far less numerous and the coral formations fewer and less developed.¹

Far from being in a region of subsidence, Agassiz was able to detect from the position of the modern conglomerate beach rock in the Maldives traces of a slight elevation in many widely scattered parts of the groups. Another objection to the theory that these atolls have been formed by subsidence would appear to be shown by the uneven nature of the bottom developed by the soundings in the vicinity of the atolls, which show that there are great differences in the depths of the banks. This, on the theory of subsidence, would mean a very improbably great and uneven difference in the subsidence within short distances, while Agassiz always maintained that the theory demands a gradual and even subsidence. The topography of this great Maldivian Plateau is, however, no more irregular than that of any mountain plateau that has not been elevated above sea level.

Agassiz found the Maldives to be situated on a submarine plateau on whose secondary plateaus corals have established themselves wherever the bank is sufficiently shallow to permit of their growth. The colored plate shows the general appearance of a characteristic Maldivian atoll. It will be noticed that the rim is composed

¹ Agassiz considers that the reason the Alacran Reef is the only real atoll on the Yucatan Plateau is because the locality is not in the region of regular trades or monsoons.

of a number of small atolls, called "faros" by the natives, while the interior is studded with faros, shoals, and islands. The peculiar conditions found in the Maldives are probably due chiefly to the alternating north-east and southwest monsoons, which convert a weather into a lee shore, and vice versa, and set up alternating currents in the lagoon; thus creating forces which contribute in a great measure not only to the shape of the shoals upon which the corals have started, but to the growth of the corals themselves. This view is strengthened by the fact that in the southern part of the archipelago, which is outside the region of monsoons, the atolls are very similar to some of those in the Pacific. In the Maldives, however, the corals have grown up from banks at a suitable depth, while in the Paumotus, for instance, the foundations for the corals have been cut from ledges of a once greater height. That corals grow with unusual luxuriance within the lagoons, in marked contrast to the scanty growths in atolls of the Pacific, accounts for the many faros and flats found in the Maldives. The numerous wide passes between the faros on the rim of the lagoon allow a very free circulation of water, which renders the conditions within the lagoon more favorable for coral growths than in most lagoons elsewhere; the immense bodies of water that the monsoons force across these lagoons are also a very considerable factor in the formation of the composite atoll.

From his anchorage at Male, Agassiz had his first view of those remarkable rings which form such a characteristic feature in the coral reef scenery of the lagoons of the Maldives. These rings, bands of shallow, light-colored water, stand out from the deep-blue water

surrounding them like ghosts of an atoll, and enclose a lagoon, light blue or emerald-colored, according to its depth. These faros are not necessarily circular ; they vary greatly and are indirectly controlled by the topography of the bottom. When nearly circular, there have probably been no agencies to interfere with the symmetrical growth of the coral. Some of the inner faros are elliptical, pear-shaped, or crescent-shaped, but as a rule they are much more symmetrical than the faros of the outer rim, which are distorted by the full force of the monsoons.

The ring-like faros are apparently formed by the upward growth of circular or elliptical patches of corals occupying slight elevations above the general level of the surrounding plateau. These patches may grow up uniformly to form a bank, or they may grow up as rings, the corals of the outer face only rising toward the surface, those in the centre being killed by want of clean water and food, or choked with sand that is washed into the interior, which is filled more slowly than the growth of corals on the rim. When the rim reaches the surface it may develop in two ways. In one case, the lagoon may gradually fill in and be changed into a flat with an islet or islets forming on its rim ; these may slowly grow to cover the whole reef flat. The islets become covered with scant vegetation from the adjacent faros ; with the growth of the land, large trees will obtain a foothold, till at last what was once a submerged faro will be transformed into a densely wooded island. In the other case, a sand bar may form a little islet or islets on the rim of the lagoon ; these islets are gradually joined together and become crescent-shaped, the horns throw out spits (much as the horn forming Provincetown Harbor has

grown on Cape Cod), until there is only a narrow passage between them; finally both horns unite and form a land rim completely enclosing a lagoon and there results the so-called ideal atoll, so rarely seen but so often described. The growth of the land rims appears to be fairly rapid, for several changes could be observed during the seventy years since Moresby's surveys. Some faros, shown on the chart as entirely submerged, were found to have little islets on their rims; islands were found to have grown into crescents, and in one case a crescent was found to have completely closed about its lagoon.

In like manner the faros forming the rim of the composite atolls have grown up on the edge of the secondary plateaus of the great Maldivian Plateau; here the faros, owing to their favorable position, have obtained a more extensive development, the unusually free circulation of water permitting an abundant growth of coral on their inner faces. Some of the lagoons of the faros of the outer rim have been formed by the growth of coral patches or lines of corals rising parallel to the outer reef flat a short distance lagoonward. These patches become joined and thus form elongated lagoons on the outer reef flats.

A number of tows were made in the lagoons, and as might be expected from their open character, the life there was found to be abundant. A number of intermediate hauls were also made off some of the principal passes. Several of the hauls¹ seem to have been richer in masses of varied material than any Agassiz had brought over a ship's side since the old days in the

¹ Intentionally somewhat limited, as Agassiz could not expect to add much to the extensive collections made by Mr. J. Stanley Gardiner during his prolonged stay in the Maldives.

Blake when he worked along the edge of the Gulf Stream. No attempt was made to collect any plants. But Agassiz calls attention to the fact that the flora of the Maldives must have been much modified by the activity of the inhabitants, who maintain a considerable trade with the Malabar Coast and Calcutta. This, rather than the effect of oceanic currents, is probably the direct cause of the introduction of many Indian and even Arabian species.

On the way north the Amra again stopped at Male. It was the end of the Ramadan, and the party arrived just in time to witness a curious procession to celebrate its close. Prominent in the line were grotesque dancers, primitive spearmen and the gorgeous royal palanquin supported on the shoulders of twelve men, and surrounded by twirling umbrella bearers. A feature of the parade was a horse, the only one on the islands, imported by the Sultan from Colombo. He was led by two men, as nobody dared to ride him.

The Sultan seemed much interested to hear of the results of the expedition, and before the ship left gave Agassiz a fine collection of the implements, tools, utensils, cloths, and dresses of the islands. His Highness, Muhammadu Imadudin, evidently retained a pleasant memory of the visit of the Amra, for the Christmas after Agassiz's death a card arrived at the Museum, from the "Ex-Sultan of the Maldives" in exile in Cairo.

TO SIR JOHN MURRAY

OFF NALANDU, SS. AMRA, MILADUMMADULU ATOLL,
Jan. 18, 1902.

Two days more and I shall head for Colombo where I mail this letter on arrival. We are due there the 23d.

This will be the end of a most successful expedition, perhaps to me the most interesting visit to a coral reef group I have made—for certainly I have learned more at the Maldives about atolls than in all my past experience in the Pacific and elsewhere. I should never have forgiven myself had I not seen the Maldives with my own eyes and formed my own opinion of what they mean.

Such a lot of twaddle as has been written about the Maldives. It's all wrong what Darwin has said, and the charts ought to have shown him that he was talking nonsense. I am afraid Gardiner also came down with a theory and saw much that he wanted to see. But Gardiner's and Cooper's patience and endurance to accomplish *what they did* are beyond praise. At any rate, I am glad that I always stuck to writing what I saw in each group and explained what I saw as I best could without trying all the time to have an all-embracing theory. Now, however, I am ready to have my say on coral reefs and write a connected account of coral reefs based upon what I have seen, and it will be a pleasure to me to write such a book and illustrate it properly by charts and photographs. But it will be quite a job with my other things on hand. I hope to live to 100!—or rather I don't hope but ought to!—to finish all.

The Captain was a regular trump, full of interest in all that was doing, an excellent photographer, a good mechanic, and he has now become an expert coral reef navigator, as good as any man I have sailed with as pilot in the South Seas. He took special charge of the sounding machine, and attended to everything and became an expert; he often sounded when I should have hesitated to do so; he only lost forty fathoms of wire making eighty soundings, quite a number near fifteen hundred

fathoms. I paid special attention to sounding all the channels and a few lines at right angles to the Plateau of the Maldives.

The weather has been superb — we lost only one day. Taking all our meals on deck, we were driven below only one day in the South Maldives at Addu, where it always blows and rains pitchforks. The Sultan was most attentive and so were all the natives.

Agassiz had now visited practically all the important coral reef regions of the world, and in no single instance had he seen an atoll or barrier reef whose formation he thought could be satisfactorily explained by subsidence. It naturally followed that his final conclusion was a total dissent from Darwin's theory on the subject.

It had always been Agassiz's intention to embody his coral reef investigations in a semi-popular summary ; somewhat such a treatment of the subject as the "Three Cruises of the Blake" was of oceanography. This unfinished book caused him much trouble ; he never took kindly to semi-popular work, and although in the last few years of his life he was constantly returning to it, he was not convinced of its utility. He used to say that all his views on the subject could be found in his various reports ; he did not realize that those interested in such matters were waiting for him to summarize his work.

He is thought to have recast the book more than once. The material he left furnishes an excellent example of his method of carrying his work in his head until the last moment. At his death nothing could be found but a vast collection of extracts from the literature of the subject marked and scored, and a few

rough notes, of no use to any one but himself. Even though this book can never be written, the splendid volumes describing his coral researches will remain as a lasting monument to his widely extended and exhaustive study of the question in the field, such as has not been even approximated by any other man.

CHAPTER XVIII

LATER YEARS

IN later years Agassiz spent but little time at Cambridge, for in the winter when not on an exploring expedition he took his work with him to Europe, which he always felt offered a much more congenial atmosphere for a man of science, or he made a journey to some milder climate. In spring and fall he paid his regular visits of inspection to Calumet, while his summers were passed on his place at "Castle Hill." As the years went by, he spent more and more of his time at Newport. The climate agreed with him, he was devotedly attached to his place, and seemed to get a contentment and peace there that he did not find elsewhere. As the span of his life drew toward its close, he lived there somewhat less strenuously, and delighted, with the free-masonry that exists between the young and the old, in the companionship of his two little grand-daughters who paid him long visits.

His mornings were spent in attending to any business matter that might turn up, and in working on the reports of his expeditions. In the latter part of his life he rarely worked much in the afternoon when at Newport. Until the trouble with his knee prevented it, he usually went out on horseback; when he was obliged to give up this exercise, he took to golfing on a little course that he had set out on the place. He often spent an hour or two pruning his trees, in which he took much interest, for he had transformed the bare little peninsula into a miniature

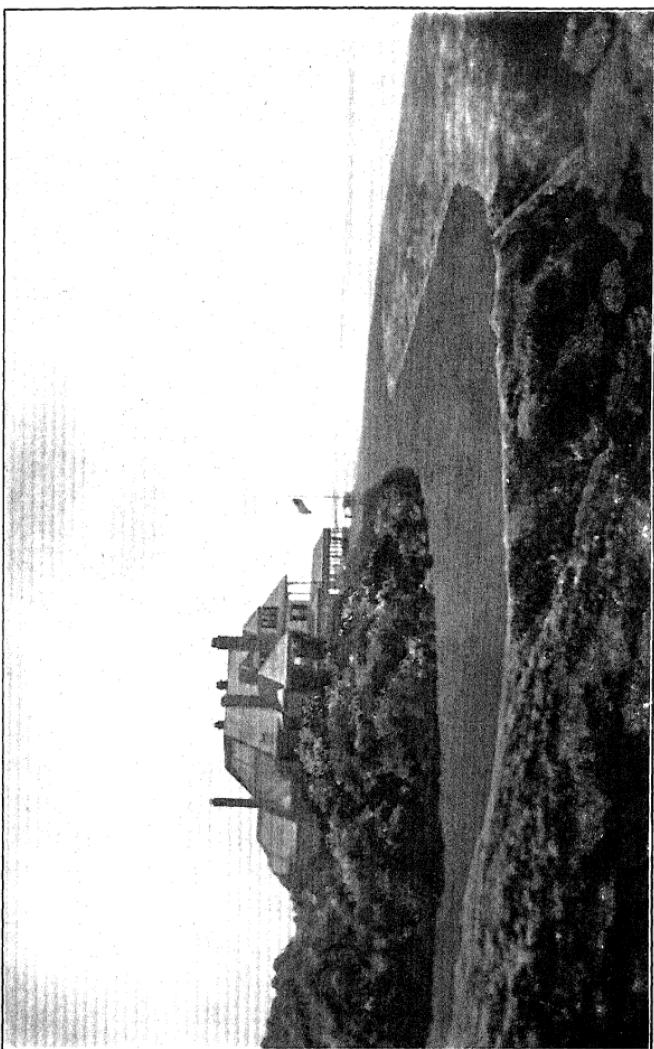
forest. Occasionally he would drive into town to call on a friend.

In the evening, when he did not have a few people to dinner, he usually dined elsewhere, for his never-failing charm, a dominant trait, as universally recognized as it is impossible to describe, made him a welcome guest at many boards. Once at some social gathering in Newport, when a vote was taken as to who was the most agreeable man at a dinner, the overwhelming majority was for Mr. Agassiz.

The giving of little dinner parties became one of his chief recreations in later life. He took the greatest interest in seeing that all the details were as complete as possible, and always brought the wine up from the cellar and decanted it himself. On special occasions, the table was lighted by two magnificent candelabra, said to be copies of a pair by Benvenuto Cellini, which he had bought as a souvenir of a scientific prize.¹ As he presided with evident pleasure over one of these festive little feasts, at a table set with old silver, which it was one of his hobbies to collect, an attractive woman of the world on either hand, he sometimes referred to the little chap who used to trudge between Neuchâtel and Freiburg because he was too poor to pay the stage-coach fare.

There was nothing of the ascetic about him; he enjoyed a good dinner and cultivated, congenial society. Both his Newport and Cambridge houses were models of comfort filled with the choicest collections of the best art of China and Japan, collections begun in the days when such treasures were less appreciated than now and more easily acquired.

¹ The Prix Serres, awarded to Agassiz in 1879, by the French Academy of Sciences, for his embryological work.



"CASTLE HILL," NEWPORT

Perhaps the hardships of his youth enabled him more fully to appreciate the comforts of his later life. But not one cent did he ever spend for ostentation, nor did his surroundings ever in any way affect the simplicity of his life or the efficiency of his work.

Money to him was chiefly valuable in that it enabled him to grasp wider scientific opportunities, and build up in the Museum a great institution for study and research in science. His ample fortune he poured out lavishly for science. He would hesitate over the price of a horse, while he bought without a thought, for many times the sum, the fossil bones of its remote ancestor.

During his life his contributions to the Museum and the University amounted to over a million and a half dollars, and a further very considerable sum will eventually revert to Harvard University for the use of the Museum. His attitude on the question of his expenditures for science is well shown in a few lines from a letter to Murray: "While the sum total seems a large expenditure and one which appeals to the public and to the University officials, I hope that my influence on science at Cambridge will not always be measured by the dollar standard, as it is so apt to be. What I care for far more is the recognition of the fact that having the means I have backed up my opinion of what was worth doing by a free expenditure of funds, and furthermore, that I have since 1870 devoted my time as completely to the interests of the Museum as if I had been working on a salary of 1500 a year. And that since that I have published the results of my work continuously and hope to be judged by that and not by the total I may have spent for the same. I want to go down as a man of

science and not to be temporarily known by a kind of cheap notoriety as an American millionaire."

While pouring out his fortune for science with one hand, he was generous almost to a fault to his children with the other, when he had once satisfied himself that they were not likely to abuse his liberality. If they sometimes laughingly expostulated at some piece of parental extravagance in their behalf, he always replied with his irresistible smile that he wanted to be sure his sons were not waiting for him to die.

On his way home from the Maldives he spent several weeks in Paris. "I have worked like a beaver while here," he writes, "and have practically finished my report on the Maldives — it now only needs reference to literature, and the getting up of charts and photographs to have it ready for the press. I am mighty glad to have it off my hands while it is fresh in my mind." In another letter he writes: "Somehow I am feeling the reaction of this trip. I have no appetite and have lost fourteen pounds since reaching Paris, but the doctor says there is nothing out except that I have worked a little too fast."

On his way home, via England, he ran up to Edinburgh to deliver an address on Coral Reefs before the Royal Society of Edinburgh. From his plans for that event, as sketched in the following letter, it does not appear that he contemplated working less strenuously.

TO SIR JOHN MURRAY

PARIS, March 3, 1902.

I returned here a couple of days ago and find your letter of February 12. It's too bad about the condition

of the Manganese Nodules. I warned the Fish Commission specially about the labels and the danger of their being rubbed to pieces. But they are hopeless there, nobody to care for anything. I may help you from my original notebook when I get home. At Edinburgh all I can do is to guess with the assistance of the list of soundings where nature of bottoms is mentioned.

I am getting cables daily from Boston — things look pretty squally in copper line. My chief stay in the office has just been ordered off South, and I don't yet know if they can hold their breath till middle of April or thereabout. I don't want to go home if I can help it, for I feel the reaction from the warm weather and am pretty well used up. I could not stand one of our blizzards.

My youngest son, Rodolphe, just telegraphed me he is to be in London the 27th, with all the figures and facts and suggestions, so that if nothing unforeseen occurs before he sails, the 17th, I can stay here till then and then take the first steamer for New York. In that case I should meet him in London the 28th, 29th, go to Edinburgh *Sunday night*, the 30th, give my Address the next afternoon at 4, go to the dinner at 7.30, and return if possible by the night train to London. I think there is one at 11 P.M.?

If you will kindly drop me a line if that is possible, I might by time I got your reply be able to say yes or no. Glad to hear from you that my Preliminary Report of Pacific pleases you and looks well. Hope you got the little Maldivian pamphlet I sent from Ceylon.

On his return to America he paid his usual spring visit to Calumet, from whence he writes: —

TO HIS SON RODOLPHE

Since I wrote you I have had two additional interviews with MacNaughton [the general manager]. I like him, and I now feel as if my orders would be carried out promptly and not appear year after year on my list of things to be attended to. He is only 37 and gets— a year to begin on. This is three times what I was getting when I left Calumet at 33, after having opened and developed it. Such is the difference between men and times now; I little dreamed I should ever offer my successor here such a salary.

To-day is a fair sample of the work I do, though it is perhaps a little mixed— talked with W— an hour— went to smelting works— saw head clerk there who wants to go to Congress— saw the superintendent of the stamp mills— had a confab with the Lake Linden School Board— another with the village authorities of the Lake— inspected the new timber mill— made a visit to the Assay Office— came up to mine to have an interview with the Catholic Bishop of Marquette— got up contract for Electric Street Railroad— had a long session with MacNaughton— another with Electric people— one with aid fund superintendent, and then went to take a long walk before dinner to visit adjoining mines.

One interesting result of Agassiz's periodic sojourns at Calumet was a series of experiments on underground temperatures, undertaken with the assistance of the engineer of the mine, Mr. P. C. F. West. Ever since mining had meant more than a mere scratching of the surface of the earth, men must have realized that

the temperature of the earth increases as we dig into it. From hitherto recorded observations Lord Kelvin had assumed that the temperature increases 1° F. for every 51 feet of depth; while observations in the St. Gotthard Tunnel gave an increase of 1° for 60 feet. From these observations it had been calculated that the crust of the earth would be about 20 miles thick for Kelvin's gradient, or about 26 miles for the other.

The deepest point in the Calumet Mine at the time of this investigation was 4712 feet (vertical depth). Holes ten feet deep were drilled in the rock at various points from 150 feet to 4580 feet, standard slow-registering thermometers were inserted, the holes plugged with wood and clay; and the thermometers were left from one to three months. The temperature of the rock at 4580 feet proved to be only 20° F. hotter than that at 150 feet. This gives an average of 1° F. for 223.7 feet, which by the same reasoning as that based on former experiments would give a thickness of the earth's crust of over 80 miles, instead of 20 and 26 miles. Agassiz never offered any explanation to account for the extraordinary difference in his temperatures from those obtained in other parts of the world, though it has been suggested that it might be due to the cooling effects of the neighboring waters of Lake Superior. He once said, however, that the article had given rise to more annoying correspondence than anything else that he had ever written.

In the fall of 1902 the friends of Mrs. Louis Agassiz arranged for the celebration of her eightieth birthday by subscribing to a building for Radcliffe College, of which she had long been President. A concert was also given in her honor at the theatre in Memorial Hall. As

she entered on the arm of her son, the audience rose in a body as a mark of respect for her. In speaking of the event afterwards she said that she felt rather nervous on entering the hall, but when she saw everybody getting up to do honor to Alex, it put her completely at her ease!

TO MRS. G. R. AGASSIZ

CAMBRIDGE, Dec. 17, 1902.

We were all glad to hear that you were safely settled in your new quarters, and we imagine you sitting out while we are wading through the snow, a regular old-fashioned snowstorm which has badly complicated the coal question and made the delivery of the little coal there is all the more difficult. I am just beginning to get ready for Saturday's sailing per Ivernia. It will be quite a new experience for Max and me to sail from Boston in a Cunarder and in a slow boat. But there was nothing better till after New Year except a French liner and I have distinct prejudices against them.

Last night I read the proof of the last page of the index of my Report on the Pacific Coral Reefs, so I shall have everything in good shape to be published as soon as practicable in my absence.

Mother will have written you about the concert at her birthday; it was a great success, the finest thing being A. Ag. sitting through the whole because he could not get out! and surviving the ordeal. The public raised \$65,000 for the building, to be called after mother, so that with the \$50,000 of the family they can put up something creditable, but will have little to run it with. The élite of the beau monde came to the house after the concert and stayed well on towards midnight. Mother



ELIZABETH C. AGASSIZ

is none the worse for all this, in fact would like a second festival, provided it could be as lucrative as the first.

TO SIR JOHN MURRAY

ON BOARD THE IVERNIA,
Dec. 29, 1902.

Here I am off Queenstown, due in London Tuesday night. I only expect to be there very few days and run south. Have you come across any very good sounding machine for moderate depths? say 20 to 30 to 100 fathoms, with a cup to collect a good lot of stuff from the bottom? I want to make a lot of soundings on our pile of tailings (at Calumet) which has accumulated for thirty years and more, and find out where the valuable part has been deposited off our mills in from 10 to 50 fathoms, and want a good cup or clasper. My idea was a Thomson machine such as yachts use and a telegraph company clasper. What do you say? I've brought with me a number of the most interesting of the Plates of my Pacific Report, as well as of the maps, which I hope to show you before I turn back to the United States, though my Report ought to be out March 1, unless the printer is delayed by the paper, and I have told them to mail you a copy at once on its issue. I shall be in London at Long's Hotel, as usual, and at Athénée in Paris, my stay at each depending on the copper people I have to see—and I hope to get to Sicily later and then out.

My chirography is worse than usual, thanks to the rolling of the ship. Drop me a line to Long's regarding the sounding machine, as I want to send one home at once to use while our Lake is frozen.

TO MRS. G. R. AGASSIZ

PARIS, Feb. 2, 1903.

Max and I have been here since the first days of January, most comfortably settled in our old quarters at the Hôtel de l'Athénée. It looks very much as if we should stick here. The weather has been superb, with the exception of a short cold snap lasting only a couple of days. There can't be much more cold here, and as I am getting on well with my new work here I'll stay and do all I can to it here so as to get rid of it next summer. For though I've got out—or it's getting out—my Pacific Report, I always keep something of the kind on tap. What I am at is the Maldive Report, which will not stagger my friends with its bulk, as will undoubtedly the Pacific book; and besides that there are quite a lot waiting. With good care, husbanding my resources, there is enough material to last long enough for me to know that I had better stop and say no more.

I don't know if you have seen the Louvre since they have rearranged it. It's a very great improvement and one can see well all the good things there are in it. The great objection to going on rainy days, as I do, is that all the loafers of Paris do the same to keep warm, and it makes it pretty uncomfortable for ladies. All the settees are occupied by the dubious crowd and they cover the floors with mud.

The other day when at the Français, one of my friends who knew the Director took me all over the artists' foyer to see the relics and pictures, etc., of the theatre from the days of Molière to the present time. It is queer that for a man who wrote as much as Molière there should only be left a single letter, but then they have his

lower jaw! in a case. The portraits are most interesting, a fine one of Rachel which recalled the days when I was a Supe in college, at the Old Howard, as the only method available of seeing her act. I quite remember her chaffing me for my looks as a "sacré le natif romain!" 'T is a wonder that when they had the fire a few years ago they were able to save all this stuff undamaged.

I have been to dine with several of my friends of the French Professors. I feel quite at home with some of them.

I wish you and George were here — what a nice quartette for theatre parties we would make.

I envy you your warm weather, but I ought not to complain. I shall need heat so much if I don't get a little cold occasionally, that nothing but the infernal regions will satisfy me next.

TO ERNST EHLERS

PARIS, Feb. 2, 1903.

I heard incidentally the other day that you are coming to Paris to see Darboux about some matters connected with the International Association of Academies, so I write this to let you know that I am here and to say how much I hope the report is true, and that I may have the pleasure of seeing you again after so long a while. But if you are not coming now, perhaps you will be one of the delegates of the Göttingen Academy at the London meeting next year (1904). I think I shall appoint myself¹ as one of the delegates of the National Academy of Sciences of Washington, so as to see my German friends and colleagues. I also intended before leaving Cambridge to ask you for the address of your son-in-

¹ As President of the National Academy of Sciences.

law—is he still at Heligoland? I wanted to write to him and ask him in regard to his Report on the *Comatulæ* he has in hand from the days of Carpenter.

A few days before leaving Cambridge I completed my big Report on the Coral Reefs of the Pacific and copies of it ought to be sent out by the end of March, of which you will get one in due course. This leaves me only my Report on the Maldives and a general résumé of the whole Coral Reef question, both of which I hope to get out within the year, and then I shall go back again with renewed vigor to my Deep-Sea work. I have a huge Report on the Echini of the Albatross (1891 Ex.), of which nearly ninety Plates are completed, and I hope to go off on another and last expedition to the Pacific to explore the great gap of unknown territory left from Panama to Paumotus and Paumotus to Peru, after which I shall be getting too old to run off in that way, and I shall have to be satisfied with shorter expeditions nearer home, to the West Indies where there is still much to be done. I am hoping to interest the new Carnegie Institution, of which I am one of the Trustees, to join me in this last great Pacific Expedition, but the great trouble is to get efficient assistants, and then to have the mass of material obtained worked up by competent naturalists.

On his way home he delivered a lecture, before the Royal Society, on Coral Reefs—and in the discussion afterwards it was clearly brought out that he had not in all his wanderings seen a single atoll or barrier reef whose formation he could explain by subsidence. Agassiz was, however, disappointed that there was not more discussion, as most of the members of the Royal Society

who knew about corals were connected with the editing of the report on the boring at Funafuti, which had not yet been published, and could not be anticipated.

In the spring of 1903, Agassiz proposed to Professor H. L. Clark that he should collaborate with him in his work on the Echini. This proposal was accepted by Professor Clark, who became a member of the Museum staff, and most of the Echini collected on Agassiz's trips after 1891 were studied in collaboration, and published with those collected by the Albatross in Japan and Alaska under the title of: "Hawaiian and Other Pacific Echini;" several parts of this series of reports were in preparation at the time of Agassiz's death. In 1908, Agassiz published an elaborate memoir with forty-nine plates on the Genus *Colobocentrotus*; and a proposed memoir on *Echinonēus* and *Micropetalon*, prepared for publication by A. M. Westergren, appeared in 1911. The condition in which the material for the last-named publication was left, illustrates well Agassiz's methods of work; for although he had been contemplating it for some time, and the illustrations were nearing completion, yet not a scrap of text was to be found. Nevertheless, it was probably nearly ready for the press, for Agassiz, like his father, had the habit of carrying his work in his head, indeed, he often carried along in this way and at the same time several pieces of work.

He was greatly bothered in the summer of 1903 by the old trouble in his leg, brought on again by over-exertion at Calumet that spring, while on his tours of inspection underground. About the middle of June he writes from Newport:—

"While out West early in May I managed to badly

sprain my leg and have been in bed for nearly three weeks and am just out now, past week, on crutches. This is going to be a slow job and will greatly interfere with my work this summer. It will postpone the Maldivian Report if I don't get better quicker than of late, and the doctor does not encourage me greatly. I had the other day an offer from the Carnegie Institute to undertake an Expedition to survey the Tropical Pacific — Geology, Botany, Anthropology, Zoölogy, including the sounding of the great Eastern Pacific triangle, Acapulco, Manga Reva, Callao, with intermediate lines Manga Reva to Galapagos: Galapagos to Easter Island: Easter Island to Callao, on supposition I could get the Albatross, the Carnegie giving me \$50,000 to equip her and \$100,000 a year for the Expedition for five years! Had this come five years earlier I would have jumped at it. But I shall be nearly sixty-nine in November, 1904, which is earliest time we could start, and I fear I must say no, though I feel greatly tempted to do the Eastern Pacific work and leave to others the rest, such as sounding and dredging round each oceanic group and carrying on the shore biological matters, though it would be mighty interesting to dredge each group into deep oceanic water adjoining, judging from the Echini I have just received from the Hawaiian Islands, which cover that ground."

Agassiz again passed the greater part of the winter of 1903-04 in Paris; he was already busy over the preparations for his next expedition, nearly a year away; much of his time was spent in working on his Panamic deep-sea Echini, which had been delayed for over ten years by his coral reef work. These occupations were lightened

by other distractions: "I have been to see most of my friends," he writes, "and am quite in the swim." The Panamic Echini was published the following November: it contains a description of the Echini collected on the Albatross Expedition of 1891, and a comparison of the Echini found on both sides of the Isthmus of Panama. From the similarity of the species at moderate depths on each side, he concludes that there must have been a free communication across the Isthmus in comparatively recent geological times down to a depth of about one hundred fathoms, while the species of the continental slopes are so similar to the genera of the Cretaceous period that one can assume a depth of at least two hundred and fifty fathoms in Cretaceous times. Furthermore the abyssal genera are so closely allied to those of the Jurassic period that a still greater depth seems probable at that time.

Towards the end of February, 1904, he writes from Paris:—

"In about ten days I expect to cross over to London with Max, and spend a few days browsing round in the British Museum over some of the deep-sea specimens I want to see again. I've got a few things to attend to in relation to my next expedition, see the Admiralty people and get all the information possible as to the weather, etc., of a region which is practically unknown."

Writing from London about the middle of March, he says:—

"I have just come back from the British Museum where I had a few chores left in the way of examining some specimens: that's now done and I've really fin-

ished all that I possibly hoped to get through with while on this side. I have seen most of my old friends in London and dined out galore and lunched and clubbed."

One morning in London he was pleasantly surprised to hear that he had been elected, by a very handsome majority, one of the eight foreign associates of the French Academy of Sciences. This is generally considered the greatest honor the scientific world has to bestow, an honor also conferred on the elder Agassiz. With one exception it is the only case where father and son have both been foreign associates.

When, on the death of Bunsen in 1900, there was a vacancy among these foreign associates, Agassiz's name was proposed, but Sir Joseph Hooker was elected, an event of which Agassiz characteristically remarked that Sir Joseph was an older man and a more suitable choice. Again, in 1903, at the death of Virchow, Koch defeated Agassiz by one vote, two of the latter's sponsors being sick. At this election, the Academy appear to have been much influenced by the fact that while Newcomb was the only American Associate, four were Anglo-Saxon, and they did not want another; rather an amusing situation, as Agassiz was born a Prussian.¹

Among the many honors that he received, his mother-land gave him the order of "Pour le Mérite," the highest mark of recognition she had to bestow on a man of science. The foreign membership of this order, so named by Frederick the Great, is limited on its civil side to thirty men chosen from the world of Science, Literature, and Art. It had, since its foundation, been awarded to but nine Americans, including the elder Agassiz. This

¹ It will be remembered that in 1835 Neuchâtel belonged to Prussia.

was the only decoration that Carlyle would accept. It is especially appreciated by men of the learned and artistic world, because a vacancy in the foreign membership is virtually filled by their peers; for the German knights of the order send the Emperor three names, one of which he chooses.

In the spring of 1908, the Royal Geographical Society awarded Agassiz the Victoria Research Medal. In his absence, the United States Ambassador represented him at a meeting of the Society and received the medal from Major Leonard Darwin, the President. This medal is perhaps the most beautiful of any of its kind. Agassiz delighted in its exquisite workmanship, and with the simplicity of a child would call on his friends to admire it.

At one time President of both the National Academy of Science and the American Academy of Arts and Sciences, with every honor that the learned world of Europe had to offer, honors that were all the more remarkable in that they were never in any way sought by Agassiz, he was undoubtedly better known in America as the head of a great mining industry than as one of the most distinguished scientific men of his generation. He walked unrecognized through the streets of Cambridge, and shared with other men of science in the land of his adoption the fate of being more appreciated abroad than at home, for most Americans seem singularly incapable of weighing at its true value anything that does not lead directly to material ends.

Surely no two American laborers could have filled the rôles of a couple of recently arrived French emigrants, who were once overheard, on a wharf at Newport, commiserating each other on the barrenness of the desolate waste in which they found themselves; one of them

closing the conversation with the consoling reflection, — “Oh! well, anyway, Mr. Agassiz lives here, and he is thoroughly well known in the civilized world.”

Agassiz had resigned the direction of the Museum in 1898, giving his collections and library to the University on the condition that he should retain his work-rooms and certain other privileges at the Museum, including the right to control (and pay for) the publications relating to his expeditions and the collections made on them, which constituted the bulk of the volumes issued.

While his resignation was in part due to his wish to be able to devote more time to his own work, it was also in a degree because of the somewhat strained relations that had crept into his connection with the University. It is unfortunately true that his feelings toward the great Museum, which his efforts and resources had created, were in his later life not untouched by bitterness and sorrow. For years he had carried its development on his own shoulders alone, and in moments of depression and gloom, which were characteristic of his temperament, he would dwell on his lack of support from the outside public, and on the want of sympathy and encouragement from those highest in authority in the administration of the University; till in the end he almost grew to regret the time and energy he had devoted to the realization of his father's dreams, and wished that he had spent his funds in an ampler development of his own scientific work.

In 1900, Agassiz and his sisters, Mrs. Shaw and Mrs. Higginson, presented the University with the funds necessary to build the southwest corner piece of the Museum, completing, with the exception of a portion of the south wing, which will be an extension of the

Peabody Museum of Archæology, the building originally hoped for by the elder Agassiz.

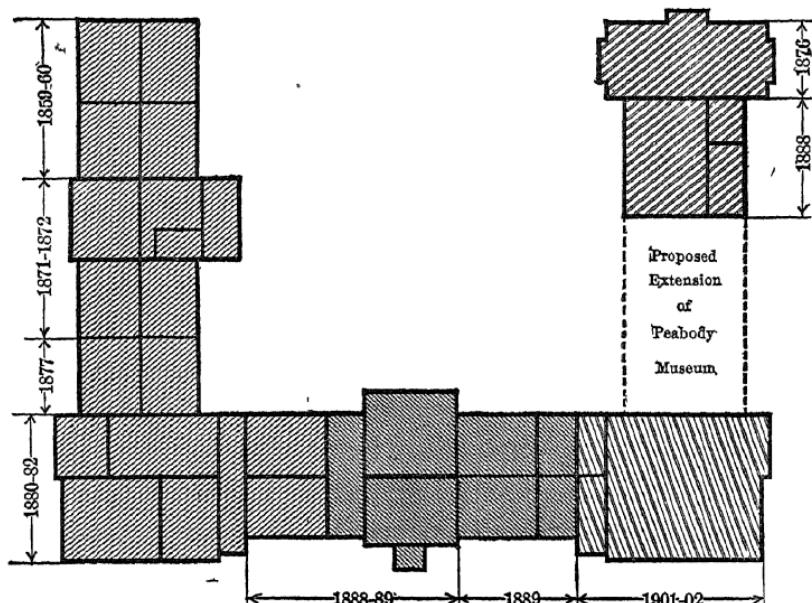
In speaking of this event, one of his scientific colleagues, in close touch with the Museum, writes Agassiz:—

“ You are always exciting surprise and admiration. Your stupendous scientific achievements are recognized as equal in amount to many men together, and you have achieved these results of the highest order under conditions of peculiar difficulty. Besides this, you have conducted successfully one of the greatest of the industries on our continent, in itself a work demanding the energy and undivided attention of many men. And yet you have carried on this work in the midst of your scientific research.

“ Now comes the greatest surprise of all, namely, that you have laid aside the memory of slights and annoyances and antagonisms, and have decided to complete the museum. This seems to me unrivalled magnanimity. I regret that my absence prevents me from going down to Newport to say so in person, and to assure you that this action appeals to me as exhibiting the highest type of character.”

The corner piece of the Museum was finished in 1902; when Agassiz accepted the honorary directorship of the entire University Museum. The opening of the new addition was celebrated by a gathering, at the invitation of the University authorities, of all those who were for any reason interested in the Museum, every one in any way connected with its development, old pupils of the elder Agassiz, and a large collection of the friends of the younger. Agassiz gave a short account of the history of the Museum from the days when his father kept

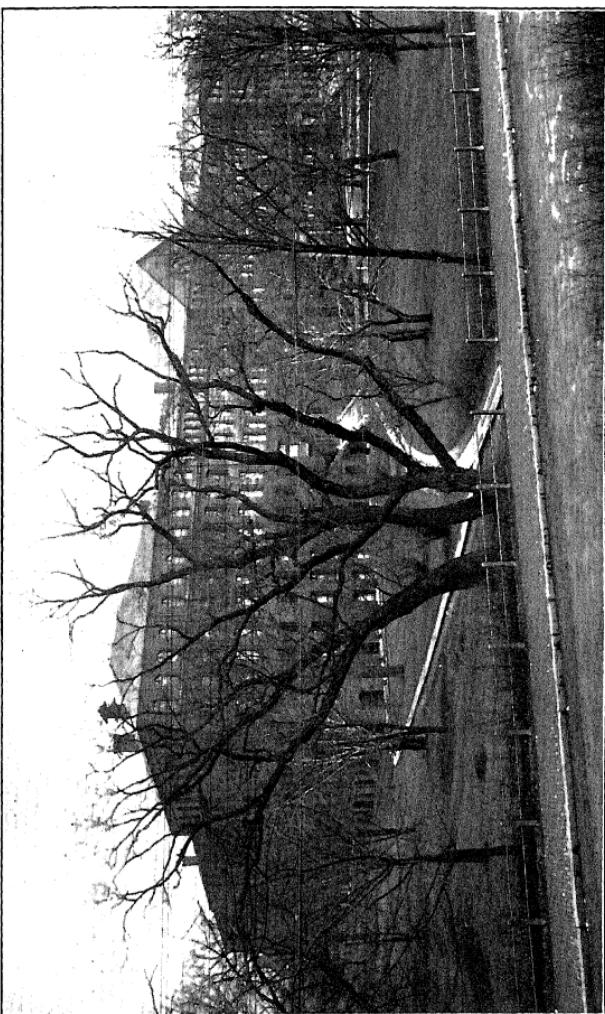
his specimens in a shanty on the banks of the Charles. It was all told in so impersonal a way, that one who knew nothing of the facts would have supposed he had no hand in the matter. The celebration concluded with a pleasant and informal tea in some of the larger rooms.



PLAN OF UNIVERSITY MUSEUM

Museum of Comparative Zoölogy. Botany, Mineralogy.
 Geology. Peabody Museum of Archeology and Ethnology.

The above little plan gives an idea of the development of the building. One can gather something of its size from the fact that the façade is almost four hundred feet long and the plan one of five stories and a basement. What Agassiz accomplished within is far more remarkable than most people realize; alongside of the systematic collections, and the ample facilities for research in the convenient storing of vast collections,



THE UNIVERSITY MUSEUM FROM THE NORTHWEST

accessible to all able to make a proper use of them, he built up a Geographical exhibit. The difficulties of such an exhibition are so well known that none of the other great museums of the world have attempted to have one. There are but two in Europe, one in Dublin, and the other in Dresden, both on a comparatively small scale. Writing on this subject in the first Museum Report after Agassiz's death, Mr. Henshaw the present Director, says: "And yet so successfully and with so true a sense of proportion did Mr. Agassiz develop the whole Museum, that the distinguished English naturalist, Wallace, stated in 1887 that as an educational institution for the public, for students, and for the special investigator, the Museum of Comparative Zoölogy was superior to the British Museum and 'probably equally in advance of every other European museum.'"

In the northwest entrance hall are two tablets that will stand till it crumbles with our civilization into dust: one to the father by the son whose filial care embodied his ideals —

LVDOVICI

AGASSIZ

—

PATRI — FILIVS

ALEXANDER

MDCCCLXXX

the other, after Agassiz's death, set by loving hands in
the opposite wall —

IN MEMORY

OF

ALEXANDER AGASSIZ

1835-1910

OMNIA QVAE HIC VIDES MONVMMENTVM

CHAPTER XIX

1904-1910

EASTERN PACIFIC EXPEDITION

Now that he had visited all the principal coral regions of the world, Agassiz planned to return to the more purely biological investigations, to which he had devoted his attention in his cruises on the Blake, and on the first Albatross Expedition in 1891. Wishing to inquire further into the conditions existing in the regions of the ocean far from land, he selected for his next voyage an almost unknown portion of the surface of the world, the Eastern Tropical Pacific. This vast expanse of water stretches from the South American coast to Manga Reva, or Gambier, the southeastern extension of the Paumotus. It is broken only by Easter Island, and offers a better opportunity for the study of the open ocean than anywhere else on the surface of the globe.

In 1904, he again obtained the Albatross, for the third and last time. In preparation for the voyage the equipment was thoroughly overhauled, and a Lucas sounding machine substituted for the Sigsbee, which had not proved entirely satisfactory on the 1899-1900 Expedition.

The problem of a sufficient coal supply, a most difficult one in those out-of-the-way regions, Agassiz finally solved by chartering, in Sydney, the Tagliaferro, a steamer considerably larger than the Albatross. Arrangements were made that the boat should proceed with a cargo of

coal to Easter Island, to await the Albatross there, and after she had filled the latter's bunkers she should go to Manga Reva, and again supply the Albatross on her arrival. Agassiz hoped when he reached Callao to complete arrangements for sending a sailing vessel with coal to the Galapagos, so as to include a line to them from Easter Island. This was finally done, so that the Albatross covered the following lines — Panama to the vicinity of the Galapagos, from there to Aguja Point on the north coast of Peru. The ship then ran about southwest for some seven hundred miles, when she headed east for Callao. The next line was from Callao to Easter Island, and afterward to the Galapagos. On leaving the Galapagos the steamer made for Manga Reva, and the last line run was from there to Acapulco, making a total distance of more than thirteen thousand miles.

The Albatross was this year in command of Lieutenant Commander L. M. Garrett, who was drowned the following year in a most unusual accident. Early one evening, while the Albatross was steaming from Yokohama to San Francisco, he was alone on the poop-deck, lying in a long chair. He must have fallen asleep there, for hours later it was discovered that some sudden lurch of the ship had capsized the chair and thrown him clean through the rope rail into the sea.

The Albatross left San Francisco early in October, 1904, to join Agassiz in Panama. On board were Professor C. A. Kofoid, an assistant of the expedition, and Mr. F. M. Chamberlain, of the Fish Commission ; these gentlemen made a number of hauls on the way down and collected a large amount of pelagic material.

Towards the end of October, Agassiz sailed from New York for Colon, taking with him Dr. Bigelow as assist-

ant and Mr. Westergren as artist. The Isthmus, which had now become familiar ground to Agassiz, had lately fallen into the possession of the United States, which were just beginning to lay out the work on the canal. Panama, however, was still enjoying its pristine filth, so the party was glad to get on board the Albatross. Here Agassiz took up his abode in the new quarters he had built for himself on the spar-deck, in which he took much satisfaction. On heading to the eastward, after reaching the neighborhood of Chatham Island, the Albatross got well into the Humboldt Current. This mighty river, of which little was previously known, sweeps north off the coast of South America, and veers to the westward south of the Galapagos. Its breadth in many places cannot be much less than nine hundred miles: the western limit of its lower course appears to be about 90° W., while the southern limit of its western extension seems to lie between 10° and 15° S.

When once within the sweep of this great current, on heading in to the eastward after reaching the neighborhood of Chatham Island, the collections became extraordinarily rich. Agassiz was among the first to call attention to the fact that the great currents of the ocean teem with animal life, swept along by these mighty rivers in their journeys through the open sea. The abundance of life at the bottom, in the path of such currents, he explained by the amount of dead animal matter that fell from the surface to the bottom, and served for food to the animals living there.

Agassiz in his report of the expedition has described the richness of animal life within the limits of the Humboldt Current. Whenever the ship was in this vast body of water the tow nets were crowded and brought

up vast quantities of fishes, *Salpæ*, *Medusæ*, *Crustacea*, and other forms of pelagic life. On one occasion the mass of the pelagic hauls consisted entirely of small brown copepods, the contents of the nets looking like sago soup. Sometimes they came across such masses of *Salpæ*, *Cytæis*, or *Cybulia* as to make a thick broth of the water. In other places the surface fairly swarmed with *Globigerinæ*, radiolarians, and diatoms. Indeed, one characteristic of the Humboldt Current seems to be that it contains within the three hundred fathom line nearly every variation of Radiolaria and diatoms. Nor was the trawl less prolific in the material it scraped from the sea bottom, which included quantities of deep-sea fishes, *Crustacea* and holothurians, many of them old friends collected in the Expedition of 1891. Some interesting genera of worms were brought up and a few mollusks; compared with 1891, however, but few star-fishes and brittle stars were obtained, and fewer sea-urchins.

One interesting result of the hauls of the tow nets from three hundred fathoms to the surface was the great number of fishes caught, many of which had previously been considered true deep-sea fishes, caught only by dredging from one thousand to fifteen hundred fathoms or more. On one occasion the tow net brought up no less than twelve species of fishes in a total of nearly one hundred and fifty specimens, and on other occasions it was not uncommon to find eight or ten species and from fifty to one hundred specimens.

Whenever the plunder from a tow or trawl reached the laboratory, Agassiz's remarkable knowledge of marine fauna was a fresh source of astonishment to his assistants. He would begin a rapid enumeration of

the catch, and jot down the results in his notebook. Nothing ever seemed to puzzle him. Not only was he deeply interested in every new and unusual creature, but he recognized everything at a glance, naming them all at first sight with amazing rapidity and almost unfailing accuracy, while he also knew where all were described. Only on the rarest occasions was he obliged to consult a reference book to confirm his opinions.

TO MRS. G. R. AGASSIZ

ON BOARD THE ALBATROSS,

Nov. 18, 1904.

A couple of days ago we finished our work to seaward of Callao and are now not more than three hundred miles from that port. I expect to dredge in a deep hole there is off that part of the coast; and if it is good ground for beasts, shall spend there two or three days scraping the bottom, and then run into Callao for coal and provisions. Thus far we have done very interesting work—not much new in the way of plunder. I seem to have got almost everything collected thus far in my 1891 Expedition in the Panamic District. Mr. Westergren is making a lot of good colored sketches, and Bigelow is drawing a lot of jelly-fishes of which we seem to have got even thus far more than in any other expedition of mine. We have been having very queer weather thus far. Soon after leaving Panama the thermometer began to drop as we went south, and when under the tropics at the Equator we got quite frozen with a temperature of 65°, all owing to our getting into the cold southern current which skirts the South American coast and strikes the Galapagos. We did not waste much time at Panama. We got there about half-past twelve Tuesday

A.M., had lunch at the hotel and dinner on board and all unpacked and tucked away in my cabin by 9, thanks to an excellent Jap boy who was got for me at San Francisco, and who is to devote himself to me during the trip. I am afraid that after three months of coddling I shall find it hard work to go back to do my own chores.

Everything thus far has worked most harmoniously and we are putting in daily a good amount of work. The Assistant sent me by the Fish Commission is a good man, as is also the Assistant I got from the University of California, Professor Kofoid, who is a very hard worker and keeps at it from morning till night. We all turn in early, breakfast at 7.30, and thus far I've not had time to read anything. I heard by cable at Panama that my collier had left Australia for Easter Island the 29th of October, so that part of the trip is safe I hope. The Captain, Garrett, is a very nice chap, always ready for work. We shall not be sorry to spend a few days at Lima while the ship is docking and coaling, and sleep in a good square bed and tramp on shore, though I cannot complain of my quarters which are most comfortable; my cabin is nine feet by twelve feet with plenty of room for a writing-table and to stow away all my clothes.

We are all wondering what has happened in the past three weeks and hope to find that the American Consul has a lot of telegraphic news of the war in the East and politics at home. I should find cables from Miss Clark telling me last news from Cambridge. We are sure to be in port the 22d or 23d, as we want, of course, to give the officers and crew a chance to celebrate Thanksgiving and let them have a good shore dinner after their

three weeks of sea grub. I have turned out this time an excellent sailor and have been most comfortable all the way from New York here.

We've got quite a menagerie on board,—a monkey, a parrot, three cats, a puppy, and a huge goat, which in 1899 was given the Albatross by one of the chiefs at the Marquesas. He brought us then about a dozen kids, all most diminutive. We kept two, ate all the others. Of the two, one was carried off the deck by a heavy sea off the Gilbert Islands, the other is now on board, a huge hairy and horny beast which feeds mainly on shavings and blotting-paper, and is full of mischief. The goat was a great friend of the former executive officer who occupied my room, so "Billy" comes and sees me every morning when I am having coffee and toast to see what he can pick up.

After waiting a few days in Callao, Agassiz started for Easter Island on December 3, without having been able to clean the ship's bottom, for a vessel already in dock proved to be so badly injured that she seemed likely to remain there indefinitely.

The line from Callao to Easter Island first disclosed the fact that west and south of the Humboldt Current, a vast tract of desert sea stretches uninterruptedly over a huge area of the Pacific Ocean. Until about 90° W the hauls continued much as they had been on the previous line, but after this as the ship left the current matters changed rapidly, and the expedition found itself in a region almost barren of pelagic fauna, while the trawl brought up from the bottom nothing but quantities of manganese nodules, sharks' teeth, and whales' ear-bones.

As this condition, which Agassiz had previously suspected, became apparent, he took a greater and greater interest in the work, which was continued with unfailing regularity, to develop the extent of the desert. As each successive haul of the trawl was swung on board he would, after examining its contents of mud and nodules, exclaim with a smile, "Not a thing," and while in this region was most pleased when he got least.

These desert tracts of the ocean's bottom can be accounted for by the fact that they exist in regions where there are no great currents to transport life over the upper layers of the sea. As there is little or no life on the surface, no food falls to the bottom, and there is nothing to support life there. In such places for various reasons there is but little accumulation of any deposit, and on this account the teeth of the huge Tertiary sharks, and the ear-bones of the whales, which must once have frequented these waters in large numbers, have not been covered up. Other portions of the skeletons of these animals are not found because they are more easily dissolved, and have disappeared.

While in this desert region, it seemed impossible to avoid manganese nodules. Sometimes the trawl would come up so heavily loaded with these concretions, which looked much like irregular potatoes, that as the bag left the water, after a few labored turns of the engine, the net would give way, and only its remnants would be swung on deck. Later in the voyage Mr. Chamberlain contrived a support by which this danger was very much lessened.

Murray, the authority on such matters, accounts for these nodules somewhat as follows. He considers them secondary formations derived from the decomposition of

volcanic rocks and minerals, principally pumice, the products of both aërial and submarine eruptions. In desert regions, where little else accumulates on the bottom, these volcanic products are exposed for a long time to the action of sea-water and thus undergo alteration. The manganese contained in them is converted into bicarbonate of manganese, which is deposited as manganese dioxide upon coming into contact with the overlying water. The deposition usually takes place around a nucleus, which may be a shark's tooth, an ear-bone of a whale, or a decomposing fragment of volcanic glass, though in some cases no nucleus can be detected.

As the Albatross neared Easter Island, Agassiz became very anxious about meeting his collier, supposed to be approaching this isolated spot from the other end of the world. Any failure on her part would, indeed, have proved a very serious matter, for there is no communication with the island except about once a year, when a Chilian man-of-war calls there. As the ship approached Cook Bay, every one was eagerly looking ahead. On rounding the promontory, not only did the collier come into view, but to their intense surprise a Chilian man-of-war, whose captain Agassiz suspected had somehow got wind of the expedition and turned up there to see what was going on.

TO MRS. G. R. AGASSIZ

ON BOARD THE ALBATROSS,
EASTER ISLAND, Dec. 17, 1904.

Little did I think that on my 69th birthday I should be writing you from such an out-of-the-way place ! We arrived here the 15th after an excellent trip from Callao; the Captain of the collier was on board almost before

we dropped anchor, and we arranged to coal at La Peyrouse Bay, on the south side of the island, where the swell interferes less with coaling alongside another steamer. By 9 o'clock we were anchored there and at work in full blast. While we were coaling we went on shore to collect plants and insects and to examine some of the platforms on which the natives of former days used to erect their stone images — a more desolate-looking place I don't know except the great lava flows of the Sandwich Islands. But this island is perhaps worse for its weak attempts to grow grass on which the owners try to raise sheep and cattle. The walking about all day was most tiresome; we were glad, indeed, to get on board again where you could put your foot down without fear of twisting your ankle in a hole between two pieces of rock.

To-day we started off early to see the quarries where the stone images are made. We got some nice little ponies, most sure-footed beasts, and a great improvement over walking. The stone images are found in all stages of finish in the interior slopes of a volcano at the east end of the island, Rana Koroka, as well as at those of the outer face. They are cut out of a comparatively soft volcanic ash which hardens with exposure. They cut all round them and when free stand them up on end to finish them, and then carry or slide them by main force to the platforms which line the seacoast of the island.

One of the finest of all the platforms is near the crater, but the images are no longer on their base. They are all flat, lying at the back of the platform. They must have been knocked down by an earthquake or some cataclysm, as it looks as if the whole work on the island was suddenly put a stop to.



EASTER ISLAND IMAGES, ABANDONED ON THE MOUNTAIN SLOPES

I am sending this by a Chile man-of-war we found here; she leaves to-morrow for Valparaiso, twenty days' passage. As the Chilians only send the vessel once a year, it was quite a hit to enable me to give signs of life.

During the five days that the Albatross lay off Easter Island, Agassiz was as eager in the study of the mysterious images and the remnant of the native population as in collecting the fauna and flora of this isolated oceanic island.

The origin of these colossal statues is an unsolved mystery, though it seemed probable to Agassiz that the immediate ancestors of the present inhabitants were the sculptors of the images. Some of the natives pretend that the carvers were their great-great-grandfathers. If so, the unambitious and indolent natives must be a great contrast to their sturdy and industrious ancestors, who somehow accomplished the Herculean, if somewhat misguided, task of encircling the island with a series of massive platforms surmounted by these rude Goliaths.

He found that the natives had long abandoned the houses of their ancestors, built of stone slabs against the hillside, for steep-roofed thatched huts. These in their turn had of late years been replaced by rude hovels of rough boards, built under the direction of a Danish carpenter, from a shipload of lumber wrecked on the island. A number of families often occupied one of these shanties, where at night men, women, and children would lie down like dogs in a kennel, with about the same ideas of the comforts of life.

Agassiz concluded that the population of this island in 1860, shortly before a large number of them were

kidnapped by the Peruvians, must have been about three thousand. Since then the inhabitants have been afflicted with that mysterious blight which settles on all Pacific Islanders at the slightest contact with civilization. Ten years later the population was reduced to nine hundred; and at the time of his visit there were less than one hundred and fifty inhabitants.

The largest indigenous animal on the island proved to be a small lizard, but this did not dampen the ardor of the collectors, who greedily gathered whatever they could lay their hands on in the way of flies, lizards, earthworms, and cockroaches, much to the amusement of the simple-minded natives. Doubtless they would have appreciated the comment of a stage-driver in the White Mountains, who remarked of the elder Agassiz and a party of his assistants, — “They said they was ‘naturals,’ and I should think they was !”

On leaving Easter Island the ship ran into a two days’ blow, the first gale of the trip, and although the Albatross was tossed about in the liveliest way, Agassiz was pleasantly surprised to find that on this occasion he was not seasick. Any one who has experienced the distressing effects of even a short period of seasickness will realize his enthusiasm for his explorations by the fact that he persisted so ardently in this work in the face of his great susceptibility to this malady.

Until they again ran into the Humboldt Current in about 12° S. latitude, the barren condition of the ocean continued; north of this they once more found the same richness of life as in other portions of the current. This lasted till they reached Chatham Island in the Galapagos. Here they found the schooner with their coal waiting for them in Wreck Bay, which she

had reached from Callao six days previously. It was the height of the dry season, and the great gray slopes of the island, covered with dry bushes and shrubs, were quite as uninviting in appearance as Darwin described them. When the *Albatross* visited the island in 1891, during the wet season, everything was green, and Agassiz, as previously noted, was much struck with its luxuriant appearance as contrasted with Darwin's impression of its general desolation.

On shore the party found the convict settlement temporarily abandoned, and the island held by a small Ecuadorian garrison. For Mr. Cobos, the former lessee of the island, who in 1891 was farming his plantation, had been killed some years previously in an insurrection of the convicts hired from the Government.

On leaving Chatham Island for Manga Reva, the ship again ran into the desert region at about 15° S., and remained in it until a short distance from Manga Reva. On reaching the port of Rikitea it became evident that if the ship were ever to reach Acapulco with the coal she could carry from Manga Reva, something must be done to clean her bottom, which had become excessively dirty from long exposure to tropical seas. Agassiz, remembering that pearl-divers were half-amphibians, solved the problem by distributing wire brushes to a number of natives, who succeeded in diving under the ship and scrubbing her clean from stem to stern.

While this process was going on and the ship was coaling, Agassiz spent his time exploring the Gambier Islands, of which Manga Reva is the largest. Darwin, from an examination of the charts, had called attention to the similarity of this archipelago to Truk in the Carolines. Agassiz, after having examined them both, was

struck by the same likeness. He considered that the Gambier Islands represented what was left from the erosion of a much larger island with a number of volcanic craters. It appeared to him to be an intermediate state, of wasting away from atmospheric agencies, between Truk and such a barrier-reef island as Bora Bora in the Society Islands.

On February 4 the Albatross, her deck loaded with coal, left the archipelago for Acapulco, some three thousand three hundred miles to the eastward. Agassiz had calculated that by carefully husbanding his coal he could manage to visit Clipperton Island, as well as continue his sounding and dredging operations. All went well for some days, but when still several hundred miles within what was supposed to be the region of southeast trades, the ship unexpectedly struck a strong and continuous head wind. The visit to Clipperton Island was given up, and all work abandoned except the morning's soundings. As the head winds continued with increased violence, it became evident that every ton of coal would have to be watched to enable the ship to reach port. During the last few days the situation became so extremely critical that Agassiz and the Captain consulted as to the possibility of reaching some island to leeward, under what little sail they were able to spread. As the Albatross under these conditions would have behaved much like a raft propelled by a pocket handkerchief, the merest landlubber can, from a glance at the chart, easily imagine the feelings of the leader of the expedition and the commander of the ship. When, at length, with only a few hours' coal in the bunkers, the chain rattled through the hawse-pipe in Acapulco Harbor, it lifted a great weight from two very anxious men, who

during the last few days must have more than once thought of such conditions as are pictured in the "Ancient Mariner."

On the way to San Diego all hands were busy putting the collections in order and packing them for shipment; but though Agassiz and his assistants worked from daylight till dark, the work was not half finished when they reached port. Here the expedition disbanded, Dr. Bigelow being left to superintend the packing and shipping of the collections, and attend to the hundred and one loose ends that are the necessary accompaniment of so long an expedition. Part of the collections was sent to Washington and part to Cambridge, whence they were distributed for study to specialists in all parts of the scientific world. The collections sent to Cambridge filled half a freight car.

In writing of Agassiz some years later, Professor Kofoid says: "Throughout the whole Expedition, and even more so as I now look back at it, I was impressed by the fact that he viewed the whole in a large way; although the whole was planned and executed with great attention to the minutest details, it was nevertheless carried out with certain larger ends definitely in view, and these were never for an instant lost sight of amidst the mass of detail that inevitably envelops such an enterprise. His work revealed a master mind, great in its comprehensive conception of the problems of the sea, and its executive efficiency."

One of Agassiz's characteristic traits was the care with which he planned for future engagements at the other end of the earth, and the punctuality with which he met them. An extract, written from the Galapagos to his son in Santa Barbara, is a good illustration of this quality.

"As far as I can guess from the past dispatch of the work and speed of the Albatross, we are due at Manga Reva the last of January and should arrive at Acapulco the last day of February and at San Diego the 12th of March and at Santa Barbara two or three days later. I must be back in Cambridge the 26th or 27th of March to clear the decks and get ready for the Washington meeting of the Academy, the 17th of April.¹ So that when I telegraph you my movements from Acapulco, engage for me a stateroom or a compartment by the Santa Fé to Chicago for the *22d of March*; if you can't get via Santa Fé, get the same accommodation via Rock Island to Chicago. If that does not work, telegraph to San Francisco for the same via Central and Union Pacific. I take it Max will be there and will probably share my quarters."

' As usual, Agassiz had returned on time to the day, after having explored one of the least known portions of the earth's surface. His short journey in the cars to Santa Barbara was an amusing contrast, for the local train was delayed for three days in a washout.

This was the last of Agassiz's expeditions devoted to zoölogical work. His cruises in the Blake had made the Gulf of Mexico, the Caribbean Sea, and certain portions of the Atlantic, as well known oceanographically as any regions of the world. In his first Albatross Expedition he had extended his investigations to the regions to the westward of Panama, and in this last voyage he had explored a vast extent of unknown ocean and discovered a huge desert area.

One of the chief ultimate objects of his oceanic inves-

¹ To preside as President of the National Academy.

tigations was the amount of variation from type that may be expected in a given period of geological time, as illustrated by the difference in the fauna on the two sides of the Isthmus of Panama since the days when the Caribbean was virtually a bay of the Pacific. The reports of the specialists on his material collected on both sides of the Isthmus were to be made with this end in view; while the preliminary geological studies, carried on in connection with his study of West Indian coral reefs, had been extended under his direction by Hill and others, so that he felt that he had an approximate idea of the period.

When he was chosen president of the International Zoölogical Congress of 1907, he first selected this question as the subject of his presidential address. But feeling that he had not yet received the reports of a sufficient number of his collaborators to make as complete a study of the subject as he desired, he finally abandoned it in favor of a summary of American oceanography.

It is one of the tragedies of a full life that so much must be left unfinished. His "Panamic Report," so long looked forward to, was never written. Thus the greatest quantitative study of the progress of evolution ever attempted was left without the final touch of the master hand.

The following winter of 1905-06 he spent on the Nile, where he had passed a winter just twenty years before. At Luxor he was much interested in visiting, in the Valley of the Kings, the excavations of his Newport neighbor, Mr. Theodore Davis. The archæological treasures which that gentleman has unearthed are now well known to every one who has heard anything of Egypt, and it may be worth noting that his first interest

in the land of the Pharaohs was excited by a little book by Mr. Martin Brimmer, lent him by Agassiz.

On his way through France, Agassiz stopped at Monte Carlo to see the Prince of Monaco, and the boat the Prince was using for his oceanographic work, to which he had been devoting for a number of years a large part of his royalties from the gambling-tables. Thus those who throw their money away at the Casino can have the consolation of knowing that they are really supporting scientific research.

TO MRS. G. R. AGASSIZ

PARIS, March 3, 1906.

I am glad to be in Paris again and will try and settle down and begin to work on the address I have to give in August, 1907, as President of the Zoölogical Congress, which meets in Boston in August. I tried hard to get out of it, but could not manage it. I hate to give that sort of thing ; one has to spend no end of time in saying nothing of any value and yet accuracy is needed and requires endless quotations and looking up people's views. I never but once delivered such an address, to the American Association for the Advancement of Science, ever so long ago at Cambridge, and if I remember rightly it cost me six months of hard work. I infinitely prefer to write a large monograph or a report on an expedition, where there is something definite, and when you have done, something of value remains. Though it is true that for the short time of a month or so the address calls for a lot of notoriety and discussions, neither of which is to my taste. I tried while loafing at Cairo to make a start, but could not get going. It seemed hopeless. I hope to succeed better while here and in London. I am here for

a couple of weeks and the same in London, to sail the 28th by the Kron Prinz Wilhelm, reaching New York the 3d of April. Max and I both wish we had kept on in our steamer from Naples to Marseilles and gone back to Monte Carlo. The Italian railroads are simply infernal and filthy and crowded to death. Being Government railroads, complaints are of course useless, and yet that is what Theodore the First wants to do. I should like to condemn him to a week of travel there — he'd change his views.

We had an excellent sight of the lava flow of Vesuvius ; it was really very fine at night to see the great river of red lava flowing down the slope and occasionally reinforced by an explosion and flow from the crater. It was quite cold in Italy ; the snow was halfway down Vesuvius, and going north of Rome came to within a few hundred feet of the plain from the summits. The few days we had at Monte Carlo were beautiful, and I greatly enjoyed seeing the Riviera again. I dropped into the Casino, and a more disgusting sight I can't imagine, to see the old men and women with their claws reaching out for the little they make, while the bank is raking it in, and young and old sitting there all day long. I should think a couple of visits would cure any gambler. There must have been twelve to fifteen hundred people in the Casino at a time and a flood going in and out.

I lunched with the Prince, where there were a lot of people I did not know, but found the members of his household whom I had met in Paris and the Captain of his yacht, who was an old acquaintance. As soon as we could get away he took me to see his Oceanic Museum ; it is a large and very handsome building to be finished

in two years, where he proposes to put on exhibition everything pertaining to marine life, etc., and to have laboratories for studying the ocean in all its aspects. We then went on board his yacht, the Princesse Alice, a boat of somewhat larger size than the Albatross, about two hundred tons more. She is a splendid boat and admirably equipped for all the kind of work I have been doing. Her only defect is she is not a twin screw and that too much space has been taken for the Prince's quarters and servants, at the cost of coal space and laboratory quarters. But she is just the kind of vessel I ought to have built in '79 when I came back from my second Blake Expedition. I think it would have paid me to have been absolutely independent for twenty-five years and not to have been obliged to use the Albatross, though I had her on admirable terms, and to charter tramps and keep transferring my equipment from one boat to another. However, I've done my share of work of that kind and somebody can go ahead now. The Prince had arranged to make a short cruise with me to Marseilles and let me see the working of the ship; unfortunately he had to give it up, as part of his necessary equipment had not got on board and was side-tracked somewhere on the way.

Feeling that he would like to visit the West Indies again, Agassiz chartered the steam yacht Virginia for the winter of 1907. After his study of coral reefs in the Indian Ocean and the Pacific, he wished to see something more of this region and to check some of the geological work that had been done for him there. Two of his sons, a daughter-in-law, and the wife of one of his assistants were included in the party, so that the expedi-

tion resolved itself into the combination of scientific review and yachting cruise.

The yacht's track is not shown on the chart, for it covers much the same ground as the second cruise of the Blake: along the Windward Islands to Grenada and back to the south of Porto Rico and Haiti, around the east end of Cuba and through the Old Bahama Channel.

TO MRS. LOUIS AGASSIZ

ON BOARD THE VIRGINIA,
ROSEAU, DOMINICA, March 5, 1907.

I have not given any signs of life for quite a while, though I have cabled from every island to Dolph and I presume you heard of my progress. We have had excellent passages thus far, though the boat being small she is pretty brisk in her movements, and we have all at different times succumbed to her motion. I had forgotten how beautiful the islands were, for when I was here in '78 the interest in the deep-sea dredging was my first care and land interests were relegated to the rear. Now it is the reverse. Some of the days we spent going round Montserrat, St. Kitt's, and specially Guadeloupe and Dominica were within reach of beautiful landscape, ever-changing mountain scenes and superb vegetation. Geologically the country is very interesting, and I am checking to a great extent the work of one of my assistants who has been here in past years, and just sent in his Report in time for me to read it before starting. A Mr. Spencer has also written a good deal on the subject, but he had preconceived ideas which warped his views of all he looked at. I have never been on an expedition in such a princely way. Comfort does not express the state of things existing on the Virginia. There is everything

you can think of on board for comfort, servants without end, an excellent stewardess, a capital head steward who is indefatigable, a chef whose cooking is simply first-class. The Captain, officers, and men are all old hands on board, most of them have been on board the *Virginia* since she was built, and take the greatest possible interest in all that is going on. I am greatly disappointed at the poverty of the towing. I expected full nets in all the passages, instead of which I find nothing or almost nothing. I cannot explain it as yet, but hope on the way home to get some clue to such a queer state of things. The assistants and machinery are all working well.

About this time a number of events combined to sap the vigor of Agassiz's old age. Calumet had recently acquired control of a number of neighboring mines. A small coterie of the minority stockholders of an adjacent property, with whom there had been a feud since the early days of Calumet, attempted by every trick known to the law to exclude the majority from the management. Agassiz was ultimately victorious, but the attack was so viciously ill-natured and so gratuitously insulting that it exasperated, distressed, and depressed him to an extent that would have been scarcely possible had he possessed the buoyancy of a younger man.

When Mr. Schuyler was killed in a distressing railway accident in the south, Agassiz was so broken by the shock that he felt unequal to going to the funeral, and sent one of his sons to represent him. He and Mr. Philip Schuyler had been the warmest of friends for upwards of fifty years. It was a very unusual and touching friendship; the admiration of the genial man of the world for the learned man of science was only equaled

by Agassiz's attachment and affection for Mr. Schuyler. During the latter's frequent visits to Cambridge they would spend days together at the Museum in the most complete sympathy and understanding; Agassiz at work on whatever he had on hand, and Mr. Schuyler quietly reading.

In the early summer of 1907, his stepmother died after a trying invalidism of several years. As she was tenderly laid beside the great boulder from the glacier of the Aar that, under the shade of Swiss pines, marks the grave of her husband, one felt that Agassiz had suddenly become an old man; the last threads binding him to the past had snapped.

A few words from a letter written that summer may suggest better than anything else the very unusual place which Mrs. Agassiz held in her stepson's life.

"I can't realize that when I go back to Boston I am not going to see mother again. I do not associate her in any way with Newport, as she always clung to Nahant; but when Max and I go back to Cambridge, the Quincy Street house will seem very empty. Fortunately I am well and can look forward to work to fill the gap which has been made. But the associations of nearly thirty-five years are not easily changed, and our relations were so peculiar that I don't know what to style them. She was my mother, my sister, my companion and friend, all in one. She carried her unspoken sorrow with a brave front, and was only too glad to be at last released. The like of her we shall not see again. From the time that I first saw her at Mr. Felton's house as Miss Cary, and I only a small boy of thirteen, there never was a word of disagreement; she belonged to me and I to

her ; it could not have been otherwise : she learned to know me through and through and placed in me the most unbounded confidence, and entrusted me with the keeping of her sorrows."

The winter of 1908 found Agassiz headed for East Africa in search of warm weather.

TO WOLCOTT GIBBS

CAMBRIDGE, Dec. 25, 1907.

I am off again to-morrow, sailing Friday per Baltic for Liverpool, to stop a few days in London and Paris, and thence to Marseilles, where I sail the 18th January for Mombasa, the terminus of the Uganda Railroad leading to Victoria Nyanza. I am taking with me Max and Woodworth. This is a lazy loafing trip merely to get into a good warm region ; no work except to keep my eyes open to see the many tribes of darkies which occupy that part of East Africa. Besides that the scenery is fine and game in way of elephants, giraffes, and antelopes, to say nothing of hippopotami and rhinoceros plenty ; lions have a way of picking passengers out of their sleeping-cars : otherwise everything is most comfortable. I expect to be back early in April in time for the Academy meeting. I see the American Philosophical Society is still insisting on holding its annual meeting at the same time as the Academy, which will cut out a good many members. It is too bad there should be this antagonism and duplication of meetings and attempt on the part of Philadelphia to cut out the Academy by superior food attractions.

He appears to have been fascinated by the presence of the herds of wild animals which seem to have been

plentiful in the neighborhood of the Mombasa and Lake Nyanza Railroad, and his letters are full of descriptions of them. "The presence of these large mammals gives to the scenery a decidedly Tertiary look, and one can readily reconstruct, if not the mammalian and reptilian fauna, even of an earlier period, at any rate build up the conditions under which they lived as contrasted to the Tertiary period. The areas which still contain these huge monsters of the present day are becoming more and more restricted, and soon our imagination alone will be left to draw upon and build up these prehistoric times."

He used to tell of some amusing observations he made of the giraffes. This animal is supposed to be a fine example of the survival of the fittest, the fittest in this case being those who possess the longest necks and front legs, which enable them more readily to reach the high boughs upon which they are supposed to feed. He was interested to notice that all the giraffes he saw were feeding upon low bushes !

Of his trip in the little steamer that plies around the shores of Lake Nyanza he writes : "Equally interesting are the natives but little removed from utter barbarism, living huddled in reed huts and dressed in shields, spears, and necklaces. But they are fine specimens of humanity, in great contrast to the wretched type of West African Congo negro, who has been imported to the United States during the days of slavery. The natives are thickly settled around the shore of Lake Nyanza. Their villages are clean, well built, and orderly, and in our cruise around the Lake we enjoyed nothing more than our visit to these primitive settlements. We made a few hauls of the tow net, but did not get anything of importance."

He escaped the New England winter of 1908-09 by a visit to southern Italy. While in Naples he tripped on a curbstone, fell headlong on his face, and knocked out his front teeth. It was a painful accident, but what appears to have bothered him most was that he should have spent his life in roaming about safely to the ends of the earth, only to meet disaster on the sidewalk of a European city.

He had intended to spend the winter of 1909-10 in wandering about Java and the East Indies. Ever ready for new work, he had also meant to look about with a view to seeing what arrangements he could make for chartering a steamer for an exploration in those regions another year. But that fall a persistent and severe attack of the old trouble with his leg warned him that it was wiser to keep within touch of doctors, and he decided to pass another winter in Egypt.

He appeared to enjoy his winter on the Nile, and to be in his usual health and in good spirits. It was not till afterwards that his son Maximilian realized how often he had found him asleep; still his last few months seem to have been quiet and happy ones.

On the way home there was some question of passing around Paris on account of the recent floods which had been causing such distress in that city.

TO MRS. G. R. AGASSIZ

HOTEL ATHÉNÉE, PARIS,
March 10, 1910.

As you see, after all we got to Paris. On further inquiry I found the doctors thought Paris cleaner than it had ever been, and that with all the disinfection that had been going on it was really as safe as at any time

in the winter. So we came and are in our old quarters, somewhat in a mess, as the manager is taking advantage of the boycott against Paris by strangers to revamp the whole house. I have seen a few of my Paris friends ; those at the Jardin des Plantes fared badly, and the menagerie worse than its keepers. They lost but one beast, one old lady giraffe who had seen her best days. The basement of the buildings where the duplicates are kept fared badly, and I fancy those collections suffered greatly. The great wine-sheds along the Seine were swept clear of thousands of hogsheads of wine that have gone down the Seine to — ? It is even now quite a sight to see the Seine rush against the arches of the bridges ; a few only of them are fully opened. They must have been well built to stand the enormous pressure thrown against them—not one was carried away. But the damage done to Paris, and especially to the suburbs, is stupendous. It is a catastrophe. All the small workmen who owned their houses in the banlieux, who came to Paris every day to work, are cleaned out, their houses and all cleared away, ruined from one day to the next, nothing left after having provided a home and for the future of their families. It is amazing how the people have recovered their bearings. Everything goes on as usual ; all the theatres, cafés, etc., are opened in full blast as usual. The recuperative capacity of the French is amazing,—the Franco-German war forty years ago, and then such a calamity as this flood on the top. They ought to be crushed, but they rise to the occasion and get ready for the daily work, which, after all, has carried many a man over calamities which seemed unbearable.

We had an excellent passage to Naples, stopped there

a couple of days — on to Rome ditto, and have engaged our passage for New York on the Adriatic to sail the 23d.

I expect to be a few days in Cambridge before the meeting of the Academy in Washington the 19th of April, then back to Quincy Street, then to Calumet early in May, and then to Newport so as to be there last part of May ready for business. What are your plans? Love to George.

On his way home he passed through London, where he dined with Murray and a number of his scientific colleagues just before sailing. He took passage in the Adriatic on March 23; a few days out he spent the evening chatting in the smoking-room with a few friends, and went to bed apparently cheerful and contented. Sometime early the next morning, on Easter Sunday, March 27, he died quietly in his sleep. Fittingly upon the ocean, in whose mysteries he had so deeply delved, his mother Nature whispered to him her great secret, and led him peacefully and painlessly into the unknown. He lies beside the wife of his youth, whom he had buried thirty-six years before in Forest Hills.

ENVOI

HENRY ADAMS TO H. L. HIGGINSON

WASHINGTON, Apl. 2, 1910.

I wish I were there to show what respect I could for Alex. If I showed all I felt, it would be worth while to go far. He was the best we ever produced, and the only one of our generation whom I would have liked to envy. When I look back on our sixty years of life, and think of our millions of contemporaries, I am pacified when the figure of Alex occurs to me, and I feel almost reconciled to my own existence. We did one first-rate work when we produced him, and I do not know that, thus far, any other country has done better. I feel as though our lives had become suddenly poor — almost as though our generation were bankrupt by his loss. He stood so high above any one else in my horizon that I can no longer see a landmark now that he is gone. To any one else except you I should have to explain all this feeling, but you know how true and natural it is and I can leave it so.

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